

RCRA RECORDS CENTER  
FACILITY Ciba Geigy Corp  
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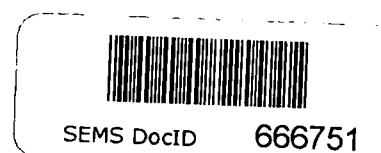
Ciba

## **SEMIANNUAL MONITORING REPORT**

**CIBA-GEIGY FACILITY  
AT  
180 MILL STREET  
CRANSTON, RHODE ISLAND**

**MONITORING RESULTS  
FOR  
JANUARY - JUNE 1999**

**CIBA SPECIALTY CHEMICALS CORPORATION  
TOMS RIVER, NEW JERSEY 08754**



Rec'd 7-9-27  
F.B.

Ciba

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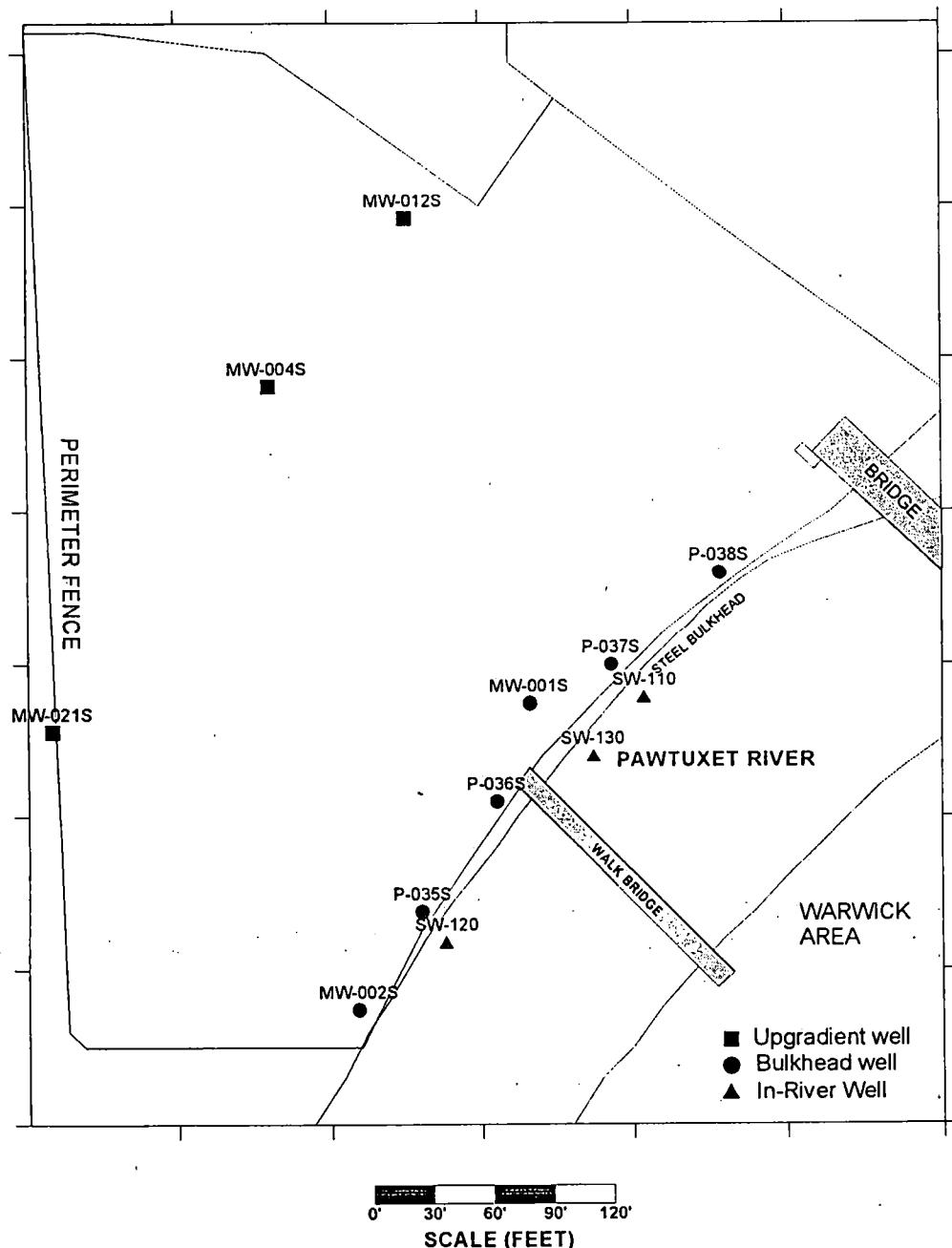
Appendix D Time-Series Graphs and Data for Bulkhead Wells

Appendix E Time-Series Graphs and Data for In-River Wells

## WELL LOCATION MAP

CIBA SPECIALTY CHEMICALS CORPORATION  
(FORMERLY CIBA-GEIGY CORPORATION)  
CRANSTON, RI FACILITY  
FORMER PRODUCTION AREA

### Chemical Well Monitoring Network



## 1.0 SUMMARY

On June 16, 1989, the USEPA and Ciba-Geigy Corporation (now Ciba Specialty Chemicals Corporation (Ciba)) entered into an Administrative Order on Consent (AOC) that required, in part, Ciba to conduct a Corrective Measures Study (CMS) and propose Media Protection Standards (MPSs) for the former manufacturing facility at Cranston, RI (the Facility). MPSs for five chemicals of concern (COC) were developed and are the focus of the semiannual monitoring at the Facility.

The semiannual monitoring episode for the first half of 1999 was performed on April 15-16, 1999, at which time 12 wells were sampled and analyzed by Rhode Island Analytical for a suite of chemicals including the COC.

The results of the sampling show no significant change in chemical concentrations for COC at the 12 wells over the 3 years since Ciba has operated the Groundwater Extraction and Treatment System (GETS) at the Facility. However, since the previous monitoring episode performed in October 1998, the number of exceedance for the MPSs for the 12 wells has decreased from 9 exceedances in 5 wells to 5 exceedances in 3 wells.

The next groundwater monitoring event will be in October 1999.

## 2.0 OBJECTIVE

The objective of the monitoring program is to evaluate the GETS on controlling releases to the Pawtuxet River while long-term corrective measures to areas of concern are being evaluated, specifically SWMU-11.

## 3.0 INTRODUCTION

In August 1996 Ciba submitted to the USEPA a Pawtuxet River Corrective Measures Study (PRCMS) Report. In the PRCMS report (Section 3.5.1., page 3-12) Ciba proposed to measure groundwater elevations in the former Production Area quarterly during the first two years following startup of the groundwater capture system and then semiannually until the groundwater capture and pretreatment system were shutdown. Data collected during hydraulic monitoring from 23 wells are evaluated periodically to verify that the shallow contaminated groundwater in the former Production Area is hydraulically controlled from discharging into the Pawtuxet River.

Inclusive of the PRCMS Ciba also proposed to monitor groundwater quality at the Facility. Groundwater is sampled semiannually from 12 selected overburden monitoring wells

(Groundwater Sampling and Analysis Plan (GSAP)) to evaluate changes in groundwater quality, specifically in COC.

#### 4.0 MEDIA PROTECTION STANDARDS

During the RCRA Facility investigation, MPSs<sup>1</sup> were developed for five chemical contaminants detected in the Production Area groundwater. These contaminants and their respective MPSs are summarized below and discussed in detail in the PRCMS Report, Section 2.4.1.

Table 1

**Media Protection Standards  
for the  
CIBA-GEIGY, Cranston R.I. Facility  
Former Production Area**

| Compound            | MPSs Concentration (ppb) |
|---------------------|--------------------------|
| 1,2-dichlorobenzene | 94                       |
| chlorobenzene       | 1700                     |
| ortho-chlorotoluene | 1500                     |
| toluene             | 1700*                    |
| xylenes             | 76                       |

\* Rhode Island Groundwater Objective GB - Groundwater classified as GB has been designated by the Rhode Island Department of Environmental Management (RIDEM) as not suitable for public or private drinking water use.

#### 5.0 MONITORING RESULTS FOR APRIL 1999

This report presents the results of the hydraulic monitoring that was performed on April 20, 1999. It also summarizes the groundwater results for the COC sampling that was performed on April 15-16, 1999. The hydraulic results are compared to pre-pumping baseline conditions

<sup>1</sup> From the Public Health and Environmental Risk Evaluation (PHERE) that concluded the sole receptor impacted by contaminated groundwater were benthic invertebrates in the shallow sediments of the Pawtuxet River.

dated September 30, 1993. The COC data are compared to previous compliance sampling rounds dating back to March 1996, when the GSAP program was initiated.

### **5.1 Hydraulic Monitoring**

Piezometric contours for the overburden aquifer were created from data collected on April 20, 1999, from 23 groundwater monitoring wells using Golden Software, Inc., SURFER FOR WINDOWS, Version 5.01 software.

The tabulated groundwater elevation data and the associated potentiometric contours, Figures 1 and 2, are included in Appendix A.

The kriging contour algorithm was used as a best fit method of approximating the directional groundwater flow pattern. The baseline results in Figure 1 show groundwater flow from northwest to southeast to the Pawtuxet River. Figure 2 shows the effect of the 2 extraction wells on the groundwater flow. While extraction well, PW-110, north of the walk bridge shows groundwater capture (nominal capacity 53 GPM), the second extraction well, PW-120, south of the walk bridge has a moderate effect at best (nominal capacity 3-5 GPM) on groundwater capture.

The above results are borne out by groundwater modeling (not included in this report) and the capture falls somewhat short along the bulkhead in the south. Ciba will shortly (August 1999) install a third extraction well, south of the walk bridge, to improve the groundwater capture in this area.

### **5.2 Chemicals Of Concern Monitoring**

Twelve wells were sampled as part of the GSAP. The wells are divided into three groups, as shown in the Location Map of Section iii, and the April 1999 COC analytical results are included in Table 2 at the end of section 5.

A discussion of the COC results are as follows:

The Bulkhead wells are six in number and 5 of the 6 wells are meeting the MPS numbers. The exception is well MW-002S located at the southeast corner of the former Production Area. Well MW-002S had exceedances in 1,2-dichlorobenzene (140 ppb vs 94 MPS) and chlorobenzene (2260 ppb vs 1700 MPS). The history of this well shows chlorobenzene exceedances in 4 of the 7 sampling events inclusive of the last 2 events, therefore no improvement for chlorobenzene is observed. The 1,2-dichlorobenzene exceedance was only the second in 7 sampling events and this exceedance needs confirmation.

Three wells are designated upgradient to the Bulkhead wells, and 2 of the 3 wells show exceedances in the MPSs for o-chlorotoluene and/or xylenes. Well MW-021S is located adjacent to the east perimeter fence and directly south of the SWMU-11 source area. This well was high in both o-chlorotoluene (9000 ppb vs 1500 MPS) and xylenes (520 ppb vs 76 MPS) for the last two sampling events, exceeding the MPSs in both events. Well MW-004S is downgradient to the SWMU-11 source area and was high for xylenes (730 ppb vs 76 MPS). This well has consistency exceeded the MPS for xylenes and no improvement is observed or expected until the source area is remediated.

The three In-River wells did not have exceedances in any of the MPSs. In fact, since semiannual monitoring was initiated in March 1996 the 3 In-River wells have not exceeded any MPS for any of the COC.

Table 2

Monitoring Results for April 1999  
Chemicals Of Concern  
(as ppb)

| Well Location | Well Number | MPS | 94<br>1,2-dichloro-<br>benzene | 1700<br>chloro-<br>benzene | 1500<br>o-chloro-<br>toluene | 1700<br>toluene | 76<br>xylenes |
|---------------|-------------|-----|--------------------------------|----------------------------|------------------------------|-----------------|---------------|
| Upgradient    | MW-004S     |     | 50 U                           | 50                         | 50                           | 50 U            | 730           |
|               | MW-012S     |     | 10 U                           | 12                         | 10 U                         | 10 U            | 24            |
|               | MW-021S     |     | 50 U                           | 50 U                       | 9000                         | 50 U            | 520           |
| Bulkhead      | MW-001S     |     | 50 U                           | 1100                       | 50 U                         | 50 U            | 50 U          |
|               | MW-002S     |     | 140                            | 2260                       | 10 U                         | 420             | 33            |
|               | P-035S      |     | 20                             | 480                        | 10 U                         | 10 U            | 10 U          |
|               | P-036S      |     | 10 U                           | 200                        | 10 U                         | 10 U            | 10 U          |
|               | P-037S      |     | 10 U                           | 210                        | 10 U                         | 10 U            | 10 U          |
|               | P-038S      |     | 1 U                            | 1 U                        | 1 U                          | 1 U             | 1 U           |
| In-River      | SW-110      |     | 50 U                           | 670                        | 50 U                         | 50 U            | 50 U          |
|               | SW-120      |     | 10 U                           | 92                         | 10 U                         | 10 U            | 10 U          |
|               | SW-130      |     | 1 U                            | 5                          | 5                            | 1 U             | 1 U           |

U = Nondetect with detection limit given

J = Estimated value

## 6.0 DISCUSSION OF RESULTS

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The April 1999 Certificate Of Analysis by R.I. Analytical is included in Appendix B. The cumulative results from 1996 to the present for 12 wells and 5 COC are included as Tables 3, 4, and 5 in Appendices C, D, and E respectively . The cumulative results of each COC are plotted as Time-Series graphs for a better perception of trends, if any, over the sampling history since the inception of the groundwater extraction system in September 1995. These plots are also found in the respective Appendices C, D, and E.

A review of the upgradient wells (Table 3, Appendix C) indicates improvement in MW-004S in both o-chlorotoluene and toluene contamination, while MW-021S is showing the opposite results.

Trends in concentration are not apparent in the 6 Bulkhead wells (Table 4, Appendix D). The MPSs are being met in all but well MW-002S.

The good news is in the 3 In-River wells (Table 5, Appendix E) where most of the analytical is nondetect in COC. The contaminant with the most noticeable presence is chlorobenzene, but the concentrations are decreasing in these wells. Well SW-110, where chlorobenzene values near the MPS (1600 ppb vs 1700 MPS) were first observed in March 1996, are now about 1/3 as much.

## 7.0 CONCLUSION

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Groundwater quality as measured by the exceedance in MPSs for groundwater monitoring in the former Production Area has improved over time. Hydraulic capture falls short at the bulkhead and the introduction of a third purge well expected by August 1999 should improve these results.

The next surface water sampling of the river is scheduled for October 1999.

**APPENDIX A**

**TABULATED**

**GROUNDWATER ELEVATION DATA**

**AND**

**POTENIOMETRIC CONTOURS**

**CIBA SPECIALTY CHEMICALS CORPORATION**  
**(FORMERLY CIBA-GEIGY CORPORATION)**  
**180 MILL STREET**  
**CRANSTON, RI**

**GROUNDWATER MONITORING**

April 20, 1999

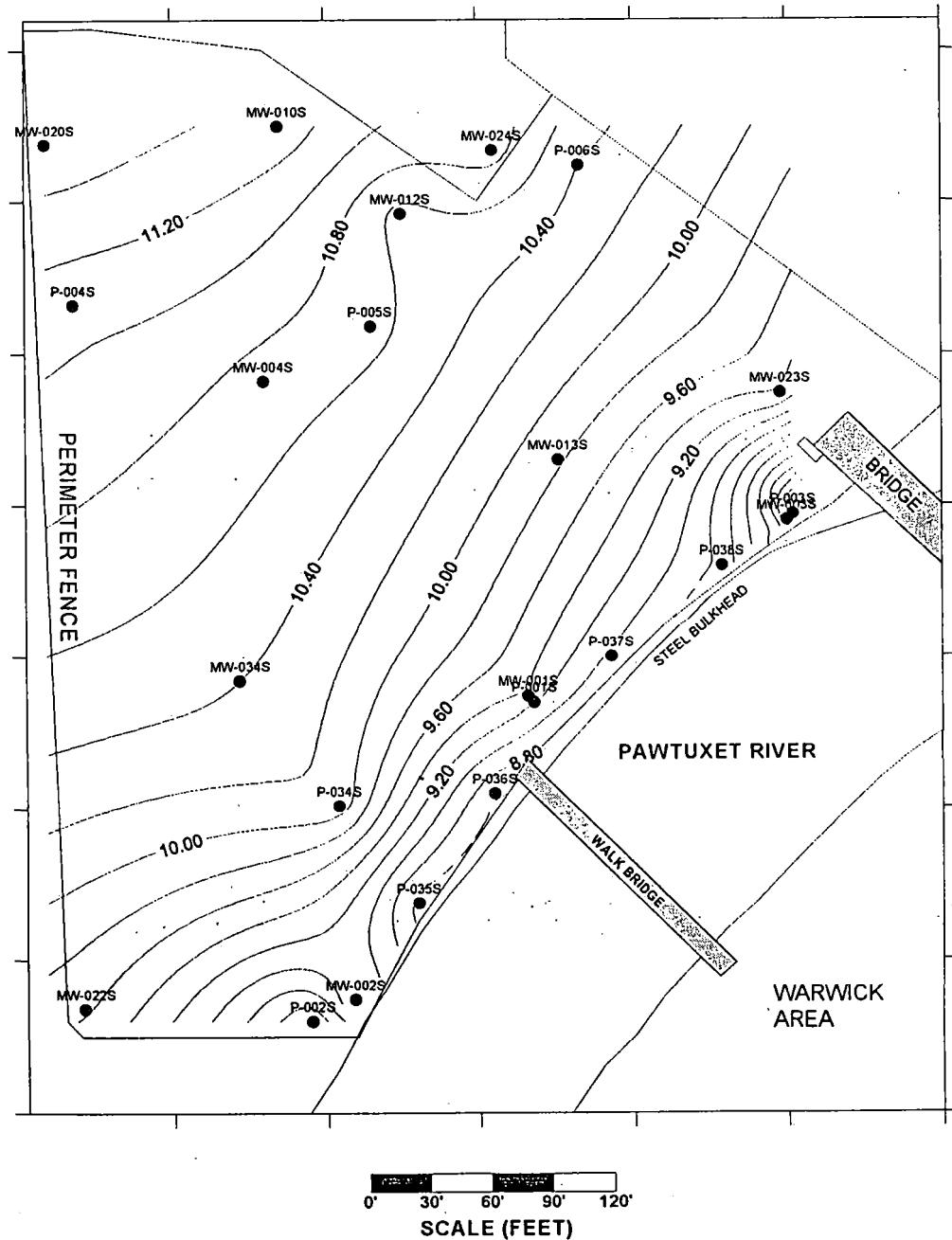
September 30, 1993

| MONITORING<br>WELL | TOC<br>MSL<br>FEET | TOC TO<br>WATER<br>FEET | GW ELEVATION<br>MSL<br>FEET | GW ELEVATION<br>MSL<br>FEET |
|--------------------|--------------------|-------------------------|-----------------------------|-----------------------------|
| MW-001S            | 15.04              | 7.68                    | 7.36                        | 9.39                        |
| MW-002S            | 14.46              | 6.84                    | 7.62                        | 9.21                        |
| MW-003S            | 16.61              | 8.15                    | 8.46                        | 7.96                        |
| MW-004S            | 21.29              | 10.49                   | 10.80                       | 10.72                       |
| MW-010S            | 22.62              | 11.29                   | 11.33                       | 11.34                       |
| MW-012S            | 22.54              | 11.65                   | 10.89                       | 10.54                       |
| MW-013S            | 18.44              | 9.71                    | 8.73                        | 9.83                        |
| MW-020S            | 21.94              | 10.40                   | 11.54                       | 11.53                       |
| MW-022S            | 16.87              | 7.15                    | 9.72                        | 9.63                        |
| MW-023S            | 20.71              | 11.50                   | 9.21                        | 9.41                        |
| MW-024S            | 21.04              | 10.00                   | 11.04                       | 10.89                       |
| MW-034S            | 18.85              | 8.38                    | 10.47                       | 10.4                        |
| P-001S             | 16.41              | 8.58                    | 7.83                        | 9.17                        |
| P-002S             | 13.85              | 6.55                    | 7.30                        | 8.38                        |
| P-003S             | 15.45              | 8.10                    | 7.35                        | 7.09                        |
| P-004S             | 19.92              | 8.66                    | 11.26                       | 11.07                       |
| P-005S             | 21.18              | 11.18                   | 10.00                       | 10.68                       |
| P-006S             | 23.62              | 12.90                   | 10.72                       | 10.39                       |
| P-034S             | 17.15              | 7.35                    | 9.80                        | 10.12                       |
| P-035S             | 15.32              | 7.92                    | 7.40                        | 8.51                        |
| P-036S             | 15.91              | 8.46                    | 7.45                        | 8.62                        |
| P-037S             | 15.69              | 11.20                   | 4.49                        | 8.96                        |
| P-038S             | 16.19              | 8.60                    | 7.59                        | 8.74                        |

Figure 1

CIBA SPECIALTY CHEMICALS CORPORATION  
CRANSTON, RI FACILITY  
FORMER PRODUCTION AREA

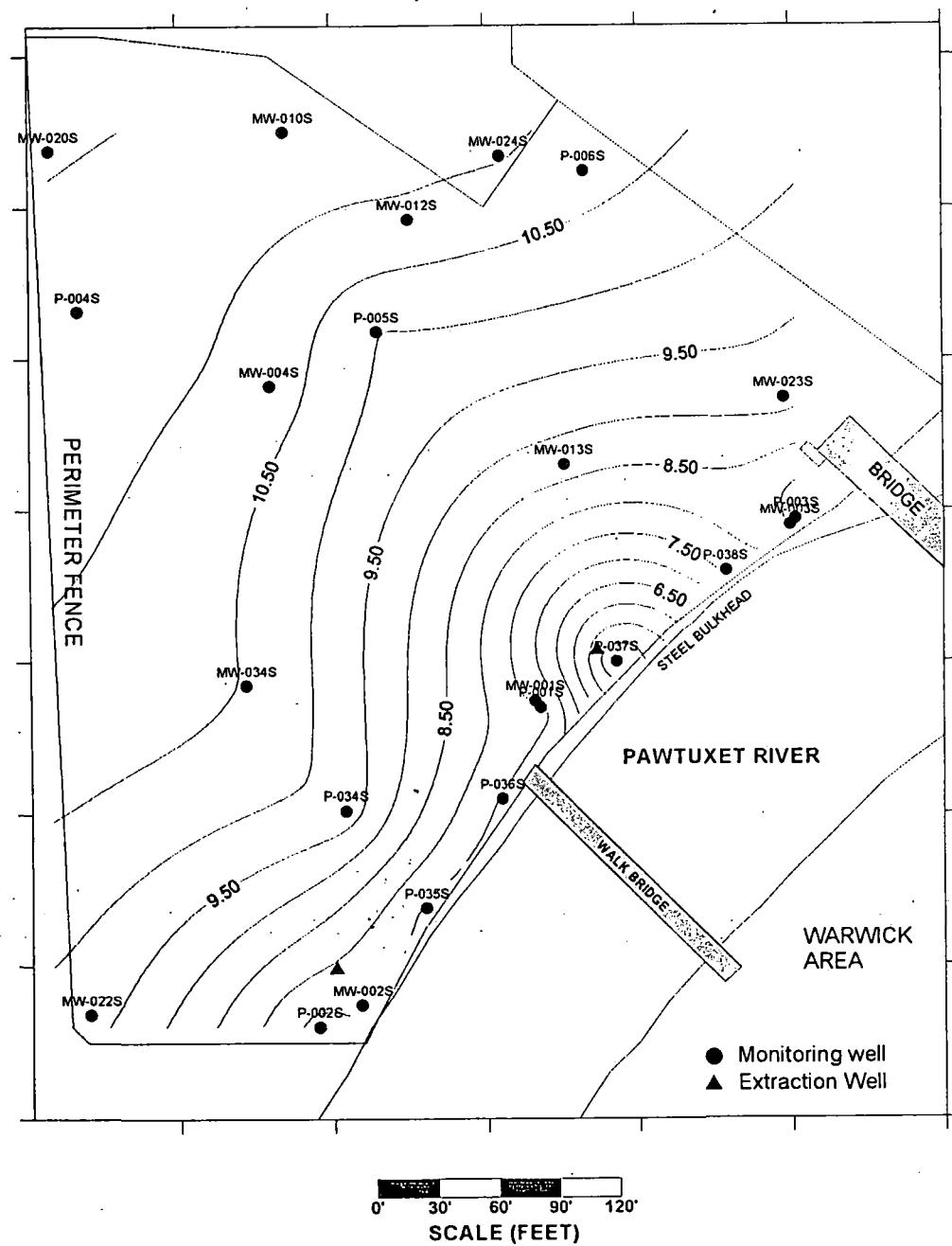
Pre-Pump & Treat Potentiometric Surface Map  
September 30, 1993



**Figure 2**

**CIBA SPECIALTY CHEMICALS CORPORATION  
CRANSTON, RI FACILITY  
FORMER PRODUCTION AREA**

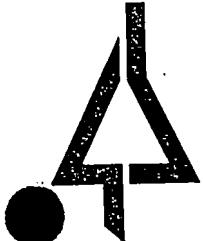
**Potentiometric Surface Map  
April 20, 1999**



**APPENDIX B**

**CERTIFICATE OF ANALYSIS**

**R. I. ANALYTICAL**



# R.I. Analytical

Specialists in Environmental Services

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.  
Attn: Mr. Barry Cohen  
Environmental Building #743  
Route 37 West  
Toms River, NJ 08754

Date Received: 4/16/99  
Date Reported: 5/03/99  
P.O. #: T18-27T1124  
Work Order #: 9904-03334

---

**DESCRIPTION:** CIBA SITE-CRANSTON (SEVENTEEN GROUNDWATER SAMPLES)

---

Subject sample(s) has/have been analyzed by our laboratory with the attached results.

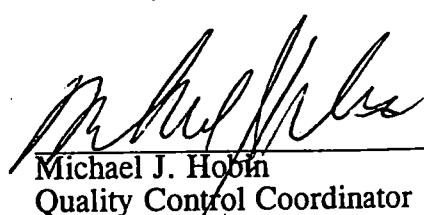
**Reference:** All parameters were analyzed by U.S. EPA approved methodologies. The specific methodologies are listed in the methods column of the Certificate Of Analysis.

If you have any questions regarding this work, or if we may be of further assistance, please contact us.

Approved by

James E. Mich  
Vice President

enc: Chain of Custody



Michael J. Hobin  
Quality Control Coordinator

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 001

SAMPLE DESCRIPTION: MW-02S GRAB 4/15/99 @0930

| PARAMETER                         | SAMPLE RESULTS | DET. LIMIT | UNITS    | METHOD    | ANALYZED DATE/TIME | ANALYST |
|-----------------------------------|----------------|------------|----------|-----------|--------------------|---------|
| pH (field)                        | 7.0            |            | SU       | EPA 150.1 | 4/15/99 9:30       | PAP     |
| SPECIFIC CONDUCTANCE              | 590            | 1          | µMHOS/CM | EPA 120.1 | 4/15/99 9:30       | PAP     |
| TEMPERATURE (field)               | 49.0           |            | F        | EPA 170.1 | 4/15/99 9:30       | PAP     |
| Dissolved Oxygen                  | <1.0           | 1.0        | mg/l     | EPA 360.1 | 4/15/99 9:30       | PAP     |
| <b>Volatile Organic Compounds</b> |                |            |          |           |                    |         |
| chloromethane                     | <100           | 100        | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| bromomethane                      | <100           | 100        | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| vinyl chloride                    | 790            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| dichlorodifluoromethane           | <100           | 100        | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| chloroethane                      | <100           | 100        | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| methylene chloride                | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| trichlorofluoromethane            | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| 1,1-dichloroethylene              | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| 1,1-dichloroethane                | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| trans-1,2-dichloroethylene        | 140            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| chloroform                        | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| 1,2-dichloroethane                | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| 1,1,1-Trichloroethane             | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| carbon tetrachloride              | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| bromodichloromethane              | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| 1,2-dichloropropane               | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| cis-1,3-dichloropropylene         | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| trichloroethylene                 | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| trans-1,3-dichloropropylene       | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| 1,1,2-Trichloroethane             | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| Dibromochloromethane              | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| Bromoform                         | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| Tetrachloroethylene               | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| 1,1,2,2-Tetrachloroethane         | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| Chlorobenzene                     | 2260           | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| 2-chloroethyl vinyl ether         | <20            | 20         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| dichlorobenzenes                  | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| benzene                           | 58             | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| toluene                           | 420            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| ethylbenzene                      | <10            | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| xylenes                           | 33             | 10         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| acetone                           | <100           | 100        | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| carbon disulfide                  | <50            | 50         | ug/l     | 8240      | 4/28/99 4:52       | RAM     |
| 2-butanone                        | <100           | 100        | ug/l     | 8240      | 4/28/99 4:52       | RAM     |

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.  
 Date Received: 4/16/99  
 Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 001

MW-02S GRAB 4/15/99 @0930

| PARAMETER            | SAMPLE RESULTS | DET. LIMIT | UNITS   | METHOD | ANALYZED DATE/TIME | ANALYST |
|----------------------|----------------|------------|---------|--------|--------------------|---------|
| vinyl acetate        | <500           | 500        | ug/l    | 8240   | 4/28/99 4:52       | RAM     |
| 4-methyl-2-pentanone | <500           | 500        | ug/l    | 8240   | 4/28/99 4:52       | RAM     |
| 2-hexanone           | <500           | 500        | ug/l    | 8240   | 4/28/99 4:52       | RAM     |
| Styrene              | <10            | 10         | ug/l    | 8240   | 4/28/99 4:52       | RAM     |
| O-chlorotoluene      | <10            | 10         | ug/l    | 8240   | 4/28/99 4:52       | RAM     |
| 1,2-Dichlorobenzene  | 140            | 10         | ug/l    | 8240   | 4/28/99 4:52       | RAM     |
| 1,3-Dichlorobenzene  | <10            | 10         | ug/l    | 8240   | 4/28/99 4:52       | RAM     |
| 1,4-Dichlorobenzene  | <10            | 10         | ug/l    | 8240   | 4/28/99 4:52       | RAM     |
| Surrogates           |                | RANGE      |         | 8240   | 4/28/99 4:52       | RAM     |
| Dibromofluoromethane | 115            |            | 86-118% | 8240   | 4/28/99 4:52       | RAM     |
| 4-Bromofluorobenzene | 94             |            | 86-115% | 8240   | 4/28/99 4:52       | RAM     |
| Toluene-D8           | 107            |            | 88-110% | 8240   | 4/28/99 4:52       | RAM     |

Increased detection limit due to sample matrix.

Volatile organic analyses performed under the operating guidelines  
method 8260.

R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.  
 Date Received: 4/16/99  
 Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 002

SAMPLE DESCRIPTION: SW-120 GRAB 4/15/99 @1015

| PARAMETER                         | SAMPLE RESULTS | DET. LIMIT | UNITS    | METHOD    | ANALYZED DATE/TIME | ANALYST |
|-----------------------------------|----------------|------------|----------|-----------|--------------------|---------|
| pH (field)                        | 6.9            |            | SU       | EPA 150.1 | 4/15/99 10:15      | PAP     |
| SPECIFIC CONDUCTANCE              | 300            | 1          | uMHOS/CM | EPA 120.1 | 4/15/99 10:15      | PAP     |
| TEMPERATURE (field)               | 52.0           |            | F        | EPA 170.1 | 4/15/99 10:15      | PAP     |
| Dissolved Oxygen                  | 2.5            | 1.0        | mg/l     | EPA 360.1 | 4/15/99 10:15      | PAP     |
| <b>Volatile Organic Compounds</b> |                |            |          |           |                    |         |
| chloromethane                     | <100           | 100        | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| bromomethane                      | <100           | 100        | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| vinyl chloride                    | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| dichlorodifluoromethane           | <100           | 100        | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| chloroethane                      | <100           | 100        | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| methylene chloride                | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| trichlorofluoromethane            | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| 1,1-dichloroethylene              | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| 1,1-dichloroethane                | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| trans-1,2-dichloroethylene        | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| chloroform                        | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| 1,2-dichloroethane                | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| 1,1,1-Trichloroethane             | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| carbon tetrachloride              | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| bromodichloromethane              | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| 1,2-dichloropropane               | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| cis-1,3-dichloropropylene         | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| trichloroethylene                 | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| trans-1,3-dichloropropylene       | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| 1,1,2-Trichloroethane             | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| Dibromochloromethane              | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| Bromoform                         | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| Tetrachloroethylene               | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| 1,1,2,2-Tetrachloroethane         | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| Chlorobenzene                     | 92             | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| 2-chloroethyl vinyl ether         | <20            | 20         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| dichlorobenzenes                  | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| benzene                           | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| toluene                           | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| ethylbenzene                      | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| xylenes                           | <10            | 10         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| acetone                           | <100           | 100        | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| carbon disulfide                  | <50            | 50         | ug/l     | 8240      | 4/28/99 5:55       | RAM     |
| 2-butanone                        | <100           | 100        | ug/l     | 8240      | 4/28/99 5:55       | RAM     |

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 002

SW-120 GRAB 4/15/99 @1015

| PARAMETER            | SAMPLE RESULTS | DET. LIMIT | UNITS   | METHOD | ANALYZED DATE/TIME | ANALYST |
|----------------------|----------------|------------|---------|--------|--------------------|---------|
| vinyl acetate        | < 500          | 500        | ug/l    | 8240   | 4/28/99 5:55       | RAM     |
| 4-methyl-2-pentanone | < 500          | 500        | ug/l    | 8240   | 4/28/99 5:55       | RAM     |
| 2-hexanone           | < 500          | 500        | ug/l    | 8240   | 4/28/99 5:55       | RAM     |
| Styrene              | < 10           | 10         | ug/l    | 8240   | 4/28/99 5:55       | RAM     |
| O-chlorotoluene      | < 10           | 10         | ug/l    | 8240   | 4/28/99 5:55       | RAM     |
| 1,2-Dichlorobenzene  | < 10           | 10         | ug/l    | 8240   | 4/28/99 5:55       | RAM     |
| 1,3-Dichlorobenzene  | < 10           | 10         | ug/l    | 8240   | 4/28/99 5:55       | RAM     |
| 1,4-Dichlorobenzene  | < 10           | 10         | ug/l    | 8240   | 4/28/99 5:55       | RAM     |
| Surrogates           |                | RANGE      |         | 8240   | 4/28/99 5:55       | RAM     |
| Dibromofluoromethane | 113            |            | 86-118% | 8240   | 4/28/99 5:55       | RAM     |
| 4-Bromofluorobenzene | 100            |            | 86-115% | 8240   | 4/28/99 5:55       | RAM     |
| Toluene-D8           | 109            |            | 88-110% | 8240   | 4/28/99 5:55       | RAM     |

Increased detection limit due to sample matrix.

Volatile organic analyses performed under the operating guidelines  
method 8260.

R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 003

SAMPLE DESCRIPTION: P-35S GRAB 4/15/99 @1040

| PARAMETER                         | SAMPLE RESULTS | DET. LIMIT | UNITS    | METHOD    | ANALYZED DATE/TIME | ANALYST |
|-----------------------------------|----------------|------------|----------|-----------|--------------------|---------|
| pH (field)                        | 7.4            |            | SU       | EPA 150.1 | 4/15/99 10:40      | PAP     |
| SPECIFIC CONDUCTANCE              | 436            | 1          | uMHOS/CM | EPA 120.1 | 4/15/99 10:40      | PAP     |
| TEMPERATURE (field)               | 50.0           |            | F        | EPA 170.1 | 4/15/99 10:40      | PAP     |
| Dissolved Oxygen                  | < 1.0          | 1.0        | mg/l     | EPA 360.1 | 4/15/99 10:40      | PAP     |
| <b>Volatile Organic Compounds</b> |                |            |          |           |                    |         |
| chloromethane                     | < 100          | 100        | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| bromomethane                      | < 100          | 100        | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| vinyl chloride                    | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| dichlorodifluoromethane           | < 100          | 100        | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| chloroethane                      | < 100          | 100        | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| methylene chloride                | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| trichlorofluoromethane            | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| 1,1-dichloroethylene              | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| 1,1-dichloroethane                | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| trans-1,2-dichloroethylene        | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| chloroform                        | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| 1,2-dichloroethane                | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| 1,1,1-Trichloroethane             | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| carbon tetrachloride              | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| bromodichloromethane              | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| 1,2-dichloropropane               | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| cis-1,3-dichloropropylene         | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| trichloroethylene                 | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| trans-1,3-dichloropropylene       | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| 1,1,2-Trichloroethane             | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| Dibromochloromethane              | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| Bromoform                         | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| Tetrachloroethylene               | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| 1,1,2,2-Tetrachloroethane         | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| Chlorobenzene                     | 480            | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| 2-chloroethyl vinyl ether         | < 20           | 20         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| dichlorobenzenes                  | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| benzene                           | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| toluene                           | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| ethylbenzene                      | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| xylenes                           | < 10           | 10         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| acetone                           | < 100          | 100        | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| carbon disulfide                  | < 50           | 50         | ug/l     | 8240      | 4/28/99 7:01       | RAM     |
| 2-butanone                        | < 100          | 100        | ug/l     | 8240      | 4/28/99 7:01       | RAM     |

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytics

Sample #: 003

P-35S GRAB 4/15/99 @1040

| PARAMETER            | SAMPLE RESULTS | DET. LIMIT | UNITS   | METHOD | ANALYZED DATE/TIME | ANALYST |
|----------------------|----------------|------------|---------|--------|--------------------|---------|
| vinyl acetate        | <500           | 500        | ug/l    | 8240   | 4/28/99 7:01       | RAM     |
| 4-methyl-2-pentanone | <500           | 500        | ug/l    | 8240   | 4/28/99 7:01       | RAM     |
| 2-hexanone           | <500           | 500        | ug/l    | 8240   | 4/28/99 7:01       | RAM     |
| Styrene              | <10            | 10         | ug/l    | 8240   | 4/28/99 7:01       | RAM     |
| O-chlorotoluene      | <10            | 10         | ug/l    | 8240   | 4/28/99 7:01       | RAM     |
| 1,2-Dichlorobenzene  | 20             | 10         | ug/l    | 8240   | 4/28/99 7:01       | RAM     |
| 1,3-Dichlorobenzene  | <10            | 10         | ug/l    | 8240   | 4/28/99 7:01       | RAM     |
| 1,4-Dichlorobenzene  | <10            | 10         | ug/l    | 8240   | 4/28/99 7:01       | RAM     |
| Surrogates           |                | RANGE      |         | 8240   | 4/28/99 7:01       | RAM     |
| Dibromofluoromethane | 110            |            | 86-118% | 8240   | 4/28/99 7:01       | RAM     |
| 4-Bromofluorobenzene | 101            |            | 86-115% | 8240   | 4/28/99 7:01       | RAM     |
| Toluene-D8           | 103            |            | 88-110% | 8240   | 4/28/99 7:01       | RAM     |

Increased detection limit due to sample matrix.

Volatile organic analyses performed under the operating guidelines  
method 8260.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 004

SAMPLE DESCRIPTION: P-36S GRAB 4/15/99 @1105

| PARAMETER                         | SAMPLE RESULTS | DET. LIMIT | UNITS    | METHOD    | ANALYZED DATE/TIME | ANALYST |
|-----------------------------------|----------------|------------|----------|-----------|--------------------|---------|
| pH (field)                        | 7.7            |            | SU       | EPA 150.1 | 4/15/99 11:05      | PAP     |
| SPECIFIC CONDUCTANCE              | 485            | 1          | µMHOS/CM | EPA 120.1 | 4/15/99 11:05      | PAP     |
| TEMPERATURE (field)               | 49.0           |            | F        | EPA 170.1 | 4/15/99 11:05      | PAP     |
| Dissolved Oxygen                  | <1.0           | 1.0        | mg/l     | EPA 360.1 | 4/15/99 11:05      | PAP     |
| <b>Volatile Organic Compounds</b> |                |            |          |           |                    |         |
| chloromethane                     | <100           | 100        | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| bromomethane                      | <100           | 100        | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| vinyl chloride                    | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| dichlorodifluoromethane           | <100           | 100        | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| chloroethane                      | <100           | 100        | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| methylene chloride                | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| trichlorofluoromethane            | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| 1,1-dichloroethylene              | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| 1,1-dichloroethane                | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| trans-1,2-dichloroethylene        | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| chloroform                        | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| 1,2-dichloroethane                | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| 1,1,1-Trichloroethane             | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| carbon tetrachloride              | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| bromodichloromethane              | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| 1,2-dichloropropane               | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| cis-1,3-dichloropropylene         | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| trichloroethylene                 | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| trans-1,3-dichloropropylene       | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| 1,1,2-Trichloroethane             | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| Dibromochemicalmethane            | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| Bromoform                         | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| Tetrachloroethylene               | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| 1,1,2,2-Tetrachloroethane         | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| Chlorobenzene                     | 200            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| 2-chloroethyl vinyl ether         | <20            | 20         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| dichlorobenzenes                  | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| benzene                           | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| toluene                           | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| ethylbenzene                      | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| xylenes                           | <10            | 10         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| acetone                           | <100           | 100        | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| carbon disulfide                  | <50            | 50         | ug/l     | 8240      | 4/28/99 7:49       | RAM     |
| 2-butanone                        | <100           | 100        | ug/l     | 8240      | 4/28/99 7:49       | RAM     |

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 004

P-36S GRAB 4/15/99 @1105

| PARAMETER            | SAMPLE RESULTS | DET. LIMIT | UNITS   | METHOD | ANALYZED DATE/TIME | ANALYST |
|----------------------|----------------|------------|---------|--------|--------------------|---------|
| vinyl acetate        | < 500          | 500        | ug/l    | 8240   | 4/28/99 7:49       | RAM     |
| 4-methyl-2-pentanone | < 500          | 500        | ug/l    | 8240   | 4/28/99 7:49       | RAM     |
| 2-hexanone           | < 500          | 500        | ug/l    | 8240   | 4/28/99 7:49       | RAM     |
| Styrene              | < 10           | 10         | ug/l    | 8240   | 4/28/99 7:49       | RAM     |
| O-chlorotoluene      | < 10           | 10         | ug/l    | 8240   | 4/28/99 7:49       | RAM     |
| 1,2-Dichlorobenzene  | < 10           | 10         | ug/l    | 8240   | 4/28/99 7:49       | RAM     |
| 1,3-Dichlorobenzene  | < 10           | 10         | ug/l    | 8240   | 4/28/99 7:49       | RAM     |
| 1,4-Dichlorobenzene  | < 10           | 10         | ug/l    | 8240   | 4/28/99 7:49       | RAM     |
| Surrogates           |                | RANGE      |         | 8240   | 4/28/99 7:49       | RAM     |
| Dibromofluoromethane | 114            |            | 86-118% | 8240   | 4/28/99 7:49       | RAM     |
| 4-Bromofluorobenzene | 95             |            | 86-115% | 8240   | 4/28/99 7:49       | RAM     |
| Toluene-D8           | 101            |            | 88-110% | 8240   | 4/28/99 7:49       | RAM     |

Volatile organic analyses performed under the operating guidelines  
method 8260.

Increased detection limit due to sample matrix.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 005

SAMPLE DESCRIPTION: SW-130 GRAB 4/15/99 @1210

| PARAMETER                         | SAMPLE RESULTS | DET. LIMIT | UNITS    | METHOD    | ANALYZED DATE/TIME | ANALYST |
|-----------------------------------|----------------|------------|----------|-----------|--------------------|---------|
| pH (field)                        | 7.0            |            | 4        | EPA 150.1 | 4/15/99 12:10      | PAP     |
| SPECIFIC CONDUCTANCE              | 328            | 1          | uMHOS/CM | EPA 120.1 | 4/15/99 12:10      | PAP     |
| TEMPERATURE (field)               | 58.0           |            | F        | EPA 170.1 | 4/15/99 12:10      | PAP     |
| Dissolved Oxygen                  | 4.3            | 1.0        | mg/l     | EPA 360.1 | 4/15/99 12:10      | PAP     |
| <b>Volatile Organic Compounds</b> |                |            |          |           |                    |         |
| chloromethane                     | <10            | 10         | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| bromomethane                      | <10            | 10         | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| vinyl chloride                    | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| dichlorodifluoromethane           | <10            | 10         | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| chloroethane                      | <10            | 10         | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| methylene chloride                | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| trichlorofluoromethane            | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| 1,1-dichloroethylene              | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| 1,1-dichloroethane                | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| trans-1,2-dichloroethylene        | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| chloroform                        | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| 1,2-dichloroethane                | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| 1,1,1-Trichloroethane             | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| carbon tetrachloride              | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| bromodichloromethane              | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| 1,2-dichloropropane               | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| cis-1,3-dichloropropylene         | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| trichloroethylene                 | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| trans-1,3-dichloropropylene       | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| 1,1,2-Trichloroethane             | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| Dibromochemicalmethane            | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| Bromoform                         | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| Tetrachloroethylene               | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| 1,1,2,2-Tetrachloroethane         | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| Chlorobenzene                     | 5              | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| 2-chloroethyl vinyl ether         | <2             | 2          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| dichlorobenzenes                  | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| benzene                           | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| toluene                           | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| ethylbenzene                      | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| xylenes                           | <1             | 1          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| acetone                           | <10            | 10         | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| carbon disulfide                  | <5             | 5          | ug/l     | 8240      | 4/28/99 8:28       | RAM     |
| 2-butanone                        | <10            | 10         | ug/l     | 8240      | 4/28/99 8:28       | RAM     |

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 005

SW-130 GRAB 4/15/99 @1210

| PARAMETER            | SAMPLE RESULTS | DET. LIMIT | UNITS   | METHOD | ANALYZED DATE/TIME | ANALYST |
|----------------------|----------------|------------|---------|--------|--------------------|---------|
| vinyl acetate        | < 50           | 50         | ug/l    | 8240   | 4/28/99 8:28       | RAM     |
| 4-methyl-2-pentanone | < 50           | 50         | ug/l    | 8240   | 4/28/99 8:28       | RAM     |
| 2-hexanone           | < 50           | 50         | ug/l    | 8240   | 4/28/99 8:28       | RAM     |
| Styrene              | < 1            | 1          | ug/l    | 8240   | 4/28/99 8:28       | RAM     |
| O-chlorotoluene      | 5              | 1          | ug/l    | 8240   | 4/28/99 8:28       | RAM     |
| 1,2-Dichlorobenzene  | < 1            | 1          | ug/l    | 8240   | 4/28/99 8:28       | RAM     |
| 1,3-Dichlorobenzene  | < 1            | 1          | ug/l    | 8240   | 4/28/99 8:28       | RAM     |
| 1,4-Dichlorobenzene  | < 1            | 1          | ug/l    | 8240   | 4/28/99 8:28       | RAM     |
| Surrogates           |                |            | RANGE   | 8240   | 4/28/99 8:28       | RAM     |
| Dibromofluoromethane | 109            |            | 86-118% | 8240   | 4/28/99 8:28       | RAM     |
| -Bromofluorobenzene  | 100            |            | 86-115% | 8240   | 4/28/99 8:28       | RAM     |
| Toluene-D8           | 88             |            | 88-110% | 8240   | 4/28/99 8:28       | RAM     |

Volatile organic analyses performed under the operating guidelines  
method 8260.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 006

SAMPLE DESCRIPTION: MW-01S GRAB 4/15/99 @1225

| PARAMETER                         | SAMPLE RESULTS | DET. LIMIT | UNITS    | METHOD    | ANALYZED DATE/TIME | ANALYST |
|-----------------------------------|----------------|------------|----------|-----------|--------------------|---------|
| pH (field)                        | 7.6            |            | SU       | EPA 150.1 | 4/15/99 12:25      | PAP     |
| SPECIFIC CONDUCTANCE              | 446            | 1          | µMHOS/CM | EPA 120.1 | 4/15/99 12:25      | PAP     |
| TEMPERATURE (field)               | 54.0           |            | F        | EPA 170.1 | 4/15/99 12:25      | PAP     |
| Dissolved Oxygen                  | <1.0           | 1.0        | mg/l     | EPA 360.1 | 4/15/99 12:25      | PAP     |
| <b>Volatile Organic Compounds</b> |                |            |          |           |                    |         |
| chloromethane                     | <500           | 500        | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| bromomethane                      | <500           | 500        | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| vinyl chloride                    | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| dichlorodifluoromethane           | <500           | 500        | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| chloroethane                      | <500           | 500        | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| methylene chloride                | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| trichlorofluoromethane            | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| 1,1-dichloroethylene              | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| 1,1-dichloroethane                | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| trans-1,2-dichloroethylene        | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| chloroform                        | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| 1,2-dichloroethane                | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| 1,1,1-Trichloroethane             | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| carbon tetrachloride              | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| bromodichloromethane              | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| 1,2-dichloropropane               | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| cis-1,3-dichloropropylene         | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| trichloroethylene                 | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| trans-1,3-dichloropropylene       | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| 1,1,2-Trichloroethane             | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| Dibromochemicalmethane            | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| Bromoform                         | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| Tetrachloroethylene               | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| 1,1,2,2-Tetrachloroethane         | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| Chlorobenzene                     | 1100           | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| 2-chloroethyl vinyl ether         | <100           | 100        | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| dichlorobenzenes                  | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| benzene                           | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| toluene                           | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| ethylbenzene                      | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| xylenes                           | <50            | 50         | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| acetone                           | <500           | 500        | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| carbon disulfide                  | <300           | 300        | ug/l     | 8240      | 4/28/99 9:07       | RAM     |
| 2-butanone                        | <500           | 500        | ug/l     | 8240      | 4/28/99 9:07       | RAM     |

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 006

MW-01S GRAB 4/15/99 @1225

| PARAMETER            | SAMPLE RESULTS | DET. LIMIT | UNITS   | METHOD | ANALYZED DATE/TIME | ANALYST |
|----------------------|----------------|------------|---------|--------|--------------------|---------|
| vinyl acetate        | <2500          | 2500       | ug/l    | 8240   | 4/28/99 9:07       | RAM     |
| 4-methyl-2-pentanone | <2500          | 2500       | ug/l    | 8240   | 4/28/99 9:07       | RAM     |
| 2-hexanone           | <2500          | 2500       | ug/l    | 8240   | 4/28/99 9:07       | RAM     |
| Styrene              | <50            | 50         | ug/l    | 8240   | 4/28/99 9:07       | RAM     |
| O-chlorotoluene      | <50            | 50         | ug/l    | 8240   | 4/28/99 9:07       | RAM     |
| 1,2-Dichlorobenzene  | <50            | 50         | ug/l    | 8240   | 4/28/99 9:07       | RAM     |
| 1,3-Dichlorobenzene  | <50            | 50         | ug/l    | 8240   | 4/28/99 9:07       | RAM     |
| 1,4-Dichlorobenzene  | <50            | 50         | ug/l    | 8240   | 4/28/99 9:07       | RAM     |
| Surrogates           |                | RANGE      |         | 8240   | 4/28/99 9:07       | RAM     |
| Dibromofluoromethane | 115            |            | 86-118% | 8240   | 4/28/99 9:07       | RAM     |
| 4-Bromofluorobenzene | 94             |            | 86-115% | 8240   | 4/28/99 9:07       | RAM     |
| Toluene-D8           | 94             |            | 88-110% | 8240   | 4/28/99 9:07       | RAM     |

Increased detection limit due to sample matrix.

Volatile organic analyses performed under the operating guidelines  
method 8260.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 007

SAMPLE DESCRIPTION: SW-110 GRAB 4/15/99 @1345

| PARAMETER                         | SAMPLE RESULTS | DET. LIMIT | UNITS    | METHOD    | ANALYZED DATE/TIME | ANALYST |
|-----------------------------------|----------------|------------|----------|-----------|--------------------|---------|
| pH (field)                        | 7.0            |            | SU       | EPA 150.1 | 4/15/99 13:45      | PAP     |
| SPECIFIC CONDUCTANCE              | 309            | 1          | µMHOS/CM | EPA 120.1 | 4/15/99 13:45      | PAP     |
| TEMPERATURE (field)               | 53.0           |            | F        | EPA 170.1 | 4/15/99 13:45      | PAP     |
| Dissolved Oxygen                  | 2.7            | 1.0        | mg/l     | EPA 360.1 | 4/15/99 13:45      | PAP     |
| <b>Volatile Organic Compounds</b> |                |            |          |           |                    |         |
| chloromethane                     | <500           | 500        | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| bromomethane                      | <500           | 500        | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| vinyl chloride                    | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| dichlorodifluoromethane           | <500           | 500        | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| chloroethane                      | <500           | 500        | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| methylene chloride                | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| trichlorofluoromethane            | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| 1,1-dichloroethylene              | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| 1,1-dichloroethane                | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| trans-1,2-dichloroethylene        | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| chloroform                        | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| 1,2-dichloroethane                | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| 1,1,1-Trichloroethane             | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| carbon tetrachloride              | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| bromodichloromethane              | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| 1,2-dichloropropane               | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| cis-1,3-dichloropropylene         | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| trichloroethylene                 | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| trans-1,3-dichloropropylene       | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| 1,1,2-Trichloroethane             | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| Dibromochloromethane              | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| Bromoform                         | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| Tetrachloroethylene               | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| 1,1,2,2-Tetrachloroethane         | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| Chlorobenzene                     | 670            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| 2-chloroethyl vinyl ether         | <100           | 100        | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| dichlorobenzenes                  | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| benzene                           | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| toluene                           | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| ethylbenzene                      | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| xlenes                            | <50            | 50         | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| acetone                           | <500           | 500        | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| carbon disulfide                  | <300           | 300        | ug/l     | 8240      | 4/28/99 12:57      | RAM     |
| 2-butanone                        | <500           | 500        | ug/l     | 8240      | 4/28/99 12:57      | RAM     |

R.I. Analytical Laboratories, Inc.

**CERTIFICATE OF ANALYSIS**

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 007

SW-110 GRAB 4/15/99 @1345

| PARAMETER            | SAMPLE RESULTS | DET. LIMIT | UNITS   | METHOD | ANALYZED DATE/TIME | ANALYST |
|----------------------|----------------|------------|---------|--------|--------------------|---------|
| vinyl acetate        | <2500          | 2500       | ug/l    | 8240   | 4/28/99 12:57      | RAM     |
| 4-methyl-2-pentanone | <2500          | 2500       | ug/l    | 8240   | 4/28/99 12:57      | RAM     |
| 2-hexanone           | <2500          | 2500       | ug/l    | 8240   | 4/28/99 12:57      | RAM     |
| Styrene              | <50            | 50         | ug/l    | 8240   | 4/28/99 12:57      | RAM     |
| O-chlorotoluene      | <50            | 50         | ug/l    | 8240   | 4/28/99 12:57      | RAM     |
| 1,2-Dichlorobenzene  | <50            | 50         | ug/l    | 8240   | 4/28/99 12:57      | RAM     |
| 1,3-Dichlorobenzene  | <50            | 50         | ug/l    | 8240   | 4/28/99 12:57      | RAM     |
| 1,4-Dichlorobenzene  | <50            | 50         | ug/l    | 8240   | 4/28/99 12:57      | RAM     |
| Surrogates           |                | RANGE      |         | 8240   | 4/28/99 12:57      | RAM     |
| Dibromofluoromethane | 114            |            | 86-118% | 8240   | 4/28/99 12:57      | RAM     |
| 4-Bromofluorobenzene | 92             |            | 86-115% | 8240   | 4/28/99 12:57      | RAM     |
| Toluene-D8           | 110            |            | 88-110% | 8240   | 4/28/99 12:57      | RAM     |

Increased detection limit due to sample matrix.

Volatile organic analyses performed under the operating guidelines  
method 8260.

R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 008

SAMPLE DESCRIPTION: P-37S GRAB 4/15/99 @1405

| PARAMETER                         | SAMPLE RESULTS | DET. LIMIT | UNITS    | METHOD    | ANALYZED DATE/TIME | ANALYST |
|-----------------------------------|----------------|------------|----------|-----------|--------------------|---------|
| pH (field)                        | 6.9            |            | SU       | EPA 150.1 | 4/15/99 14:05      | PAP     |
| SPECIFIC CONDUCTANCE              | 639            | 1          | uMHOS/CM | EPA 120.1 | 4/15/99 14:05      | PAP     |
| TEMPERATURE (field)               | 52.0           |            | F        | EPA 170.1 | 4/15/99 14:05      | PAP     |
| Dissolved Oxygen                  | 2.0            | 1.0        | mg/l     | EPA 360.1 | 4/15/99 14:05      | PAP     |
| <b>Volatile Organic Compounds</b> |                |            |          |           |                    |         |
| chloromethane                     | < 100          | 100        | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| bromomethane                      | < 100          | 100        | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| vinyl chloride                    | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| dichlorodifluoromethane           | < 100          | 100        | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| chloroethane                      | < 100          | 100        | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| methylene chloride                | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| trichlorofluoromethane            | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| 1,1-dichloroethylene              | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| 1,1-dichloroethane                | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| trans-1,2-dichloroethylene        | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| chloroform                        | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| 1,2-dichloroethane                | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| 1,1,1-Trichloroethane             | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| carbon tetrachloride              | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| bromodichloromethane              | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| 1,2-dichloropropane               | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| cis-1,3-dichloropropylene         | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| trichloroethylene                 | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| trans-1,3-dichloropropylene       | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| 1,1,2-Trichloroethane             | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| Dibromochloromethane              | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| Bromoform                         | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| Tetrachloroethylene               | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| 1,1,2,2-Tetrachloroethane         | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| Chlorobenzene                     | 210            | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| 2-chloroethyl vinyl ether         | < 20           | 20         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| dichlorobenzenes                  | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| benzene                           | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| toluene                           | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| ethylbenzene                      | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| xylenes                           | < 10           | 10         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| acetone                           | < 100          | 100        | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| carbon disulfide                  | < 50           | 50         | ug/l     | 8240      | 4/28/99 13:37      | RAM     |
| 2-butanone                        | < 100          | 100        | ug/l     | 8240      | 4/28/99 13:37      | RAM     |

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 008

P-37S GRAB 4/15/99 @1405

| PARAMETER            | SAMPLE RESULTS | DET. LIMIT | UNITS   | METHOD | ANALYZED DATE/TIME | ANALYST |
|----------------------|----------------|------------|---------|--------|--------------------|---------|
| vinyl acetate        | <500           | 500        | ug/l    | 8240   | 4/28/99 13:37      | RAM     |
| 4-methyl-2-pentanone | <500           | 500        | ug/l    | 8240   | 4/28/99 13:37      | RAM     |
| 2-hexanone           | <500           | 500        | ug/l    | 8240   | 4/28/99 13:37      | RAM     |
| Styrene              | <10            | 10         | ug/l    | 8240   | 4/28/99 13:37      | RAM     |
| O-chlorotoluene      | <10            | 10         | ug/l    | 8240   | 4/28/99 13:37      | RAM     |
| 1,2-Dichlorobenzene  | <10            | 10         | ug/l    | 8240   | 4/28/99 13:37      | RAM     |
| 1,3-Dichlorobenzene  | <10            | 10         | ug/l    | 8240   | 4/28/99 13:37      | RAM     |
| 1,4-Dichlorobenzene  | <10            | 10         | ug/l    | 8240   | 4/28/99 13:37      | RAM     |
| Surrogates           |                | RANGE      |         | 8240   | 4/28/99 13:37      | RAM     |
| Dibromofluoromethane | 112            |            | 86-118% | 8240   | 4/28/99 13:37      | RAM     |
| 4-Bromofluorobenzene | 110            |            | 86-115% | 8240   | 4/28/99 13:37      | RAM     |
| Toluene-D8           | 97             |            | 88-110% | 8240   | 4/28/99 13:37      | RAM     |

Increased detection limit due to sample matrix.

Volatile organic analyses performed under the operating guidelines  
method 8260.

R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 009

SAMPLE DESCRIPTION: P-38S GRAB 4/15/99 @1440

| PARAMETER                         | SAMPLE RESULTS | DET. LIMIT | UNITS    | METHOD    | ANALYZED DATE/TIME | ANALYST |
|-----------------------------------|----------------|------------|----------|-----------|--------------------|---------|
| pH (field)                        | 6.7            |            | SU       | EPA 150.1 | 4/15/99 14:40      | PAP     |
| SPECIFIC CONDUCTANCE              | 360            | 1          | µMHOS/CM | EPA 120.1 | 4/15/99 14:40      | PAP     |
| TEMPERATURE (field)               | 58.0           |            | F        | EPA 170.1 | 4/15/99 14:40      | PAP     |
| Dissolved Oxygen                  | 1.9            | 1.0        | mg/l     | EPA 360.1 | 4/15/99 14:40      | PAP     |
| <b>Volatile Organic Compounds</b> |                |            |          |           |                    |         |
| chloromethane                     | <10            | 10         | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| bromomethane                      | <10            | 10         | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| vinyl chloride                    | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| dichlorodifluoromethane           | <10            | 10         | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| chloroethane                      | <10            | 10         | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| ethylene chloride                 | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| trichlorofluoromethane            | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| 1,1-dichloroethylene              | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| 1,1-dichloroethane                | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| trans-1,2-dichloroethylene        | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| chloroform                        | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| 1,2-dichloroethane                | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| 1,1,1-Trichloroethane             | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| carbon tetrachloride              | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| bromodichloromethane              | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| 1,2-dichloropropane               | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| cis-1,3-dichloropropylene         | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| trichloroethylene                 | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| trans-1,3-dichloropropylene       | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| 1,1,2-Trichloroethane             | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| Dibromochloromethane              | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| Bromoform                         | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| Tetrachloroethylene               | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| 1,1,2,2-Tetrachloroethane         | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| Chlorobenzene                     | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| 2-chloroethyl vinyl ether         | <2             | 2          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| dichlorobenzenes                  | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| benzene                           | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| toluene                           | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| phenylbenzene                     | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| oluenes                           | <1             | 1          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| acetone                           | <10            | 10         | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| carbon disulfide                  | <5             | 5          | ug/l     | 8240      | 4/28/99 14:18      | RAM     |
| 2-butanone                        | <10            | 10         | ug/l     | 8240      | 4/28/99 14:18      | RAM     |

R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 009

P-38S GRAB 4/15/99 @1440

| PARAMETER            | SAMPLE RESULTS | DET. LIMIT | UNITS   | METHOD | ANALYZED DATE/TIME | ANALYST |
|----------------------|----------------|------------|---------|--------|--------------------|---------|
| vinyl acetate        | <50            | 50         | ug/l    | 8240   | 4/28/99 14:18      | RAM     |
| 4-methyl-2-pentanone | <50            | 50         | ug/l    | 8240   | 4/28/99 14:18      | RAM     |
| 2-hexanone           | <50            | 50         | ug/l    | 8240   | 4/28/99 14:18      | RAM     |
| Styrene              | <1             | 1          | ug/l    | 8240   | 4/28/99 14:18      | RAM     |
| O-chlorotoluene      | <1             | 1          | ug/l    | 8240   | 4/28/99 14:18      | RAM     |
| 1,2-Dichlorobenzene  | <1             | 1          | ug/l    | 8240   | 4/28/99 14:18      | RAM     |
| 1,3-Dichlorobenzene  | <1             | 1          | ug/l    | 8240   | 4/28/99 14:18      | RAM     |
| 1,4-Dichlorobenzene  | <1             | 1          | ug/l    | 8240   | 4/28/99 14:18      | RAM     |
| Surrogates           | <1             | 1          | ug/l    | 8240   | 4/28/99 14:18      | RAM     |
| Dibromofluoromethane |                | RANGE      |         | 8240   | 4/28/99 14:18      | RAM     |
| 4-Bromofluorobenzene | 105            |            | 86-118% | 8240   | 4/28/99 14:18      | RAM     |
| Toluene-D8           | 113            |            | 86-115% | 8240   | 4/28/99 14:18      | RAM     |
|                      | 94             |            | 88-110% | 8240   | 4/28/99 14:18      | RAM     |

Volatile organic analyses performed under the operating guidelines  
method 8260.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 010

SAMPLE DESCRIPTION: MW-21S GRAB 4/15/99 @1510

| PARAMETER                         | SAMPLE RESULTS | DET. LIMIT | UNITS    | METHOD    | ANALYZED DATE/TIME | ANALYST |
|-----------------------------------|----------------|------------|----------|-----------|--------------------|---------|
| pH (field)                        | 6.6            |            | SU       | EPA 150.1 | 4/15/99 15:10      | PAP     |
| SPECIFIC CONDUCTANCE              | 329            | 1          | uMHOS/CM | EPA 120.1 | 4/15/99 15:10      | PAP     |
| TEMPERATURE (field)               | 52.0           |            | F        | EPA 170.1 | 4/15/99 15:10      | PAP     |
| Dissolved Oxygen                  | 1.3            | 1.0        | mg/l     | EPA 360.1 | 4/15/99 15:10      | PAP     |
| <b>Volatile Organic Compounds</b> |                |            |          |           |                    |         |
| chloromethane                     | <500           | 500        | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| bromomethane                      | <500           | 500        | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| viny chloride                     | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| dichlorodifluoromethane           | <500           | 500        | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| chloroethane                      | <500           | 500        | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| methylene chloride                | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| trichlorofluoromethane            | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| 1,1-dichloroethylene              | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| 1,1-dichloroethane                | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| trans-1,2-dichloroethylene        | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| chloroform                        | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| 1,2-dichloroethane                | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| 1,1,1-Trichloroethane             | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| carbon tetrachloride              | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| bromodichloromethane              | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| 1,2-dichloropropane               | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| cis-1,3-dichloropropylene         | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| trichloroethylene                 | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| trans-1,3-dichloropropylene       | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| 1,1,2-Trichloroethane             | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| Dibromochloromethane              | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| Bromoform                         | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| Tetrachloroethylene               | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| 1,1,2,2-Tetrachloroethane         | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| Chlorobenzene                     | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| 2-chloroethyl vinyl ether         | <100           | 100        | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| dichlorobenzenes                  | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| benzene                           | <50            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| toluene                           | 13000          | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| phenylbenzene                     | 130            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| xylenes                           | 520            | 50         | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| acetone                           | <500           | 500        | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| carbon disulfide                  | <300           | 300        | ug/l     | 8240      | 4/28/99 14:58      | RAM     |
| 2-butanone                        | <500           | 500        | ug/l     | 8240      | 4/28/99 14:58      | RAM     |

R.I. Analytical Laboratories, Inc.

**CERTIFICATE OF ANALYSIS**

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 010

MW-21S GRAB 4/15/99 @1510

| PARAMETER            | SAMPLE RESULTS | DET. LIMIT | UNITS   | METHOD | ANALYZED DATE/TIME | ANALYST |
|----------------------|----------------|------------|---------|--------|--------------------|---------|
| vinyl acetate        | <2500          | 2500       | ug/l    | 8240   | 4/28/99 14:58      | RAM     |
| 4-methyl-2-pentanone | <2500          | 2500       | ug/l    | 8240   | 4/28/99 14:58      | RAM     |
| 2-hexanone           | <2500          | 2500       | ug/l    | 8240   | 4/28/99 14:58      | RAM     |
| Styrene              | <50            | 50         | ug/l    | 8240   | 4/28/99 14:58      | RAM     |
| O-chlorotoluene      | 9000           | 50         | ug/l    | 8240   | 4/28/99 14:58      | RAM     |
| 1,2-Dichlorobenzene  | <50            | 50         | ug/l    | 8240   | 4/28/99 14:58      | RAM     |
| 1,3-Dichlorobenzene  | <50            | 50         | ug/l    | 8240   | 4/28/99 14:58      | RAM     |
| 1,4-Dichlorobenzene  | <50            | 50         | ug/l    | 8240   | 4/28/99 14:58      | RAM     |
| Surrogates           |                | RANGE      |         | 8240   | 4/28/99 14:58      | RAM     |
| Dibromofluoromethane | 115            |            | 86-118% | 8240   | 4/28/99 14:58      | RAM     |
| Bromofluorobenzene   | 96             |            | 86-115% | 8240   | 4/28/99 14:58      | RAM     |
| Toluene-D8           | 93             |            | 88-110% | 8240   | 4/28/99 14:58      | RAM     |

Volatile organic analyses performed under the operating guidelines  
method 8260.

Increased detection limit due to sample matrix.

R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 013

SAMPLE DESCRIPTION: TRIP BLANK GRAB 4/15/99 @1315

| PARAMETER                         | SAMPLE RESULTS | DET. LIMIT | UNITS | METHOD | ANALYZED DATE/TIME | ANALYST |
|-----------------------------------|----------------|------------|-------|--------|--------------------|---------|
| <b>Volatile Organic Compounds</b> |                |            |       |        |                    |         |
| chloromethane                     | <10            | 10         | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| bromomethane                      | <10            | 10         | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| vinyl chloride                    | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| dichlorodifluoromethane           | <10            | 10         | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| chloroethane                      | <10            | 10         | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| methylene chloride                | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| trichlorofluoromethane            | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| 1,1-dichloroethylene              | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| 1,1-dichloroethane                | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| trans-1,2-dichloroethylene        | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| chloroform                        | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| 1,2-dichloroethane                | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| 1,1,1-Trichloroethane             | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| carbon tetrachloride              | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| bromodichloromethane              | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| 1,2-dichloropropane               | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| cis-1,3-dichloropropylene         | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| trichloroethylene                 | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| trans-1,3-dichloropropylene       | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| 1,1,2-Trichloroethane             | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| Dibromochloromethane              | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| Bromoform                         | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| Tetrachloroethylene               | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| 1,1,2,2-Tetrachloroethane         | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| Chlorobenzene                     | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| 2-chloroethyl vinyl ether         | <2             | 2          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| dichlorobenzenes                  | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| benzene                           | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| toluene                           | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| ethylbenzene                      | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| xylenes                           | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| acetone                           | <10            | 10         | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| carbon disulfide                  | <5             | 5          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| -butanone                         | <10            | 10         | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| vinyl acetate                     | <50            | 50         | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| 4-methyl-2-pentanone              | <50            | 50         | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| 2-hexanone                        | <50            | 50         | ug/l  | 8240   | 4/28/99 17:51      | RAM     |
| Styrene                           | <1             | 1          | ug/l  | 8240   | 4/28/99 17:51      | RAM     |

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 013

TRIP BLANK GRAB 4/15/99 @1315

| PARAMETER            | SAMPLE RESULTS | DET. LIMIT | UNITS   | METHOD | ANALYZED DATE/TIME | ANALYST |
|----------------------|----------------|------------|---------|--------|--------------------|---------|
| O-chlorotoluene      | <1             | 1          | ug/l    | 8240   | 4/28/99 17:51      | RAM     |
| 1,2-Dichlorobenzene  | <1             | 1          | ug/l    | 8240   | 4/28/99 17:51      | RAM     |
| 1,3-Dichlorobenzene  | <1             | 1          | ug/l    | 8240   | 4/28/99 17:51      | RAM     |
| 1,4-Dichlorobenzene  | <1             | 1          | ug/l    | 8240   | 4/28/99 17:51      | RAM     |
| Surrogates           |                |            | RANGE   | 8240   | 4/28/99 17:51      | RAM     |
| Dibromofluoromethane | 110            |            | 86-118% | 8240   | 4/28/99 17:51      | RAM     |
| 4-Bromofluorobenzene | 105            |            | 86-115% | 8240   | 4/28/99 17:51      | RAM     |
| Toluene-D8           | 88             |            | 88-110% | 8240   | 4/28/99 17:51      | RAM     |

Volatile organic analyses performed under the operating guidelines  
Method 8260.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 014

SAMPLE DESCRIPTION: FIELD BLANK GRAB 4/15/99 @0915

| PARAMETER                         | SAMPLE RESULTS | DET. LIMIT | UNITS | METHOD | ANALYZED DATE/TIME | ANALYST |
|-----------------------------------|----------------|------------|-------|--------|--------------------|---------|
| <b>Volatile Organic Compounds</b> |                |            |       |        |                    |         |
| chloromethane                     | < 10           | 10         | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| bromomethane                      | < 10           | 10         | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| vinyl chloride                    | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| dichlorodifluoromethane           | < 10           | 10         | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| chloroethane                      | < 10           | 10         | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| methylene chloride                | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| trichlorofluoromethane            | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| 1,1-dichloroethylene              | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| 1,1-dichloroethane                | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| trans-1,2-dichloroethylene        | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| chloroform                        | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| 1,2-dichloroethane                | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| 1,1,1-Trichloroethane             | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| carbon tetrachloride              | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| bromodichloromethane              | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| 1,2-dichloropropane               | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| cis-1,3-dichloropropylene         | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| trichloroethylene                 | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| trans-1,3-dichloropropylene       | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| 1,1,2-Trichloroethane             | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| Dibromochloromethane              | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| Bromoform                         | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| Tetrachloroethylene               | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| 1,1,2,2-Tetrachloroethane         | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| Chlorobenzene                     | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| 2-chloroethyl vinyl ether         | < 2            | 2          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| dichlorobenzenes                  | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| benzene                           | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| toluene                           | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| ethylbenzene                      | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| xylenes                           | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| acetone                           | < 10           | 10         | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| carbon disulfide                  | < 5            | 5          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| 2-butanone                        | < 10           | 10         | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| vinyl acetate                     | < 50           | 50         | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| 4-methyl-2-pentanone              | < 50           | 50         | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| 2-hexanone                        | < 50           | 50         | ug/l  | 8240   | 4/28/99 20:28      | RAM     |
| Styrene                           | < 1            | 1          | ug/l  | 8240   | 4/28/99 20:28      | RAM     |

R.I. Analytical Laboratories, Inc.

**CERTIFICATE OF ANALYSIS**

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 014

**FIELD BLANK GRAB 4/15/99 @0915**

| PARAMETER            | SAMPLE RESULTS | DET. LIMIT | UNITS   | METHOD | ANALYZED DATE/TIME | ANALYST |
|----------------------|----------------|------------|---------|--------|--------------------|---------|
| O-chlorotoluene      | <1             | 1          | ug/l    | 8240   | 4/28/99 20:28      | RAM     |
| 1,2-Dichlorobenzene  | <1             | 1          | ug/l    | 8240   | 4/28/99 20:28      | RAM     |
| 1,3-Dichlorobenzene  | <1             | 1          | ug/l    | 8240   | 4/28/99 20:28      | RAM     |
| 1,4-Dichlorobenzene  | <1             | 1          | ug/l    | 8240   | 4/28/99 20:28      | RAM     |
| Surrogates           |                |            | RANGE   | 8240   | 4/28/99 20:28      | RAM     |
| Dibromofluoromethane | 108            |            | 86-118% | 8240   | 4/28/99 20:28      | RAM     |
| 4-Bromofluorobenzene | 91             |            | 86-115% | 8240   | 4/28/99 20:28      | RAM     |
| Toluene-D8           | 101            |            | 88-110% | 8240   | 4/28/99 20:28      | RAM     |

Volatile organic analyses performed under the operating guidelines

Method 8260.

R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 015

SAMPLE DESCRIPTION: MW-12S GRAB 4/16/99 @0915

| PARAMETER                         | SAMPLE RESULTS | DET. LIMIT | UNITS    | METHOD    | ANALYZED DATE/TIME | ANALYST |
|-----------------------------------|----------------|------------|----------|-----------|--------------------|---------|
| pH (field)                        | 6.9            |            | SU       | EPA 150.1 | 4/16/99 9:15       | PAP     |
| SPECIFIC CONDUCTANCE              | 361            | 1          | uMHOS/CM | EPA 120.1 | 4/16/99 9:15       | PAP     |
| TEMPERATURE (field)               | 51.0           |            | F        | EPA 170.1 | 4/16/99 9:15       | PAP     |
| Dissolved Oxygen                  | 1.7            | 1.0        | mg/l     | EPA 360.1 | 4/16/99 9:15       | PAP     |
| <b>Volatile Organic Compounds</b> |                |            |          |           |                    |         |
| chloromethane                     | < 100          | 100        | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| bromomethane                      | < 100          | 100        | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| vinyl chloride                    | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| dichlorodifluoromethane           | < 100          | 100        | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| chloroethane                      | < 100          | 100        | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| methylene chloride                | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| trichlorofluoromethane            | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| 1,1-dichloroethylene              | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| 1,1-dichloroethane                | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| trans-1,2-dichloroethylene        | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| chloroform                        | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| 1,2-dichloroethane                | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| 1,1,1-Trichloroethane             | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| carbon tetrachloride              | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| bromodichloromethane              | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| 1,2-dichloropropane               | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| cis-1,3-dichloropropylene         | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| trichloroethylene                 | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| trans-1,3-dichloropropylene       | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| 1,1,2-Trichloroethane             | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| Dibromochloromethane              | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| Bromoform                         | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| Tetrachloroethylene               | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| 1,1,2,2-Tetrachloroethane         | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| Chlorobenzene                     | 12             | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| 2-chloroethyl vinyl ether         | < 20           | 20         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| dichlorobenzenes                  | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| benzene                           | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| toluene                           | < 10           | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| xylylbenzene                      | 25             | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| xylenes                           | 24             | 10         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| acetone                           | < 100          | 100        | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| carbon disulfide                  | < 50           | 50         | ug/l     | 8240      | 4/28/99 19:10      | RAM     |
| 2-butanone                        | < 100          | 100        | ug/l     | 8240      | 4/28/99 19:10      | RAM     |

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 015

MW-12S GRAB 4/16/99 @0915

| PARAMETER            | SAMPLE RESULTS | DET. LIMIT | UNITS   | METHOD | ANALYZED DATE/TIME | ANALYST |
|----------------------|----------------|------------|---------|--------|--------------------|---------|
| vinyl acetate        | < 500          | 500        | ug/l    | 8240   | 4/28/99 19:10      | RAM     |
| 4-methyl-2-pentanone | < 500          | 500        | ug/l    | 8240   | 4/28/99 19:10      | RAM     |
| 2-hexanone           | < 500          | 500        | ug/l    | 8240   | 4/28/99 19:10      | RAM     |
| Styrene              | < 10           | 10         | ug/l    | 8240   | 4/28/99 19:10      | RAM     |
| O-chlorotoluene      | < 10           | 10         | ug/l    | 8240   | 4/28/99 19:10      | RAM     |
| 1,2-Dichlorobenzene  | < 10           | 10         | ug/l    | 8240   | 4/28/99 19:10      | RAM     |
| 1,3-Dichlorobenzene  | < 10           | 10         | ug/l    | 8240   | 4/28/99 19:10      | RAM     |
| 1,4-Dichlorobenzene  | < 10           | 10         | ug/l    | 8240   | 4/28/99 19:10      | RAM     |
| Surrogates           |                |            | RANGE   | 8240   | 4/28/99 19:10      | RAM     |
| Dibromofluoromethane | 113            |            | 86-118% | 8240   | 4/28/99 19:10      | RAM     |
| Bromofluorobenzene   | 109            |            | 86-115% | 8240   | 4/28/99 19:10      | RAM     |
| Toluene-D8           | 93             |            | 88-110% | 8240   | 4/28/99 19:10      | RAM     |

Volatile organic analyses performed under the operating guidelines  
method 8260.

Increased detection limit due to sample matrix.

R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 016

SAMPLE DESCRIPTION: MW-04S GRAB 4/16/99 @0940

| PARAMETER                         | SAMPLE RESULTS | DET. LIMIT | UNITS    | METHOD    | ANALYZED DATE/TIME | ANALYST |
|-----------------------------------|----------------|------------|----------|-----------|--------------------|---------|
| pH (field)                        | 6.7            |            | SU       | EPA 150.1 | 4/16/99 9:40       | PAP     |
| SPECIFIC CONDUCTANCE              | 525            | 1          | µMHOS/CM | EPA 120.1 | 4/16/99 9:40       | PAP     |
| TEMPERATURE (field)               | 52.0           |            | F        | EPA 170.1 | 4/16/99 9:40       | PAP     |
| Dissolved Oxygen                  | 4.0            | 1.0        | mg/l     | EPA 360.1 | 4/16/99 9:40       | PAP     |
| <b>Volatile Organic Compounds</b> |                |            |          |           |                    |         |
| chloromethane                     | <500           | 500        | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| bromomethane                      | <500           | 500        | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| vinyl chloride                    | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| dichlorodifluoromethane           | <500           | 500        | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| lороethane                        | <500           | 500        | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| methylene chloride                | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| trichlorofluoromethane            | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| 1,1-dichloroethylene              | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| 1,1-dichloroethane                | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| trans-1,2-dichloroethylene        | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| chloroform                        | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| 1,2-dichloroethane                | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| 1,1,1-Trichloroethane             | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| carbon tetrachloride              | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| bromodichloromethane              | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| 1,2-dichloropropane               | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| cis-1,3-dichloropropylene         | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| trichloroethylene                 | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| trans-1,3-dichloropropylene       | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| 1,1,2-Trichloroethane             | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| Dibromochloromethane              | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| Bromoform                         | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| Tetrachloroethylene               | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| 1,1,2,2-Tetrachloroethane         | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| Chlorobenzene                     | 460            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| 2-chloroethyl vinyl ether         | <100           | 100        | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| dichlorobenzenes                  | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| benzene                           | <50            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| toluene                           | 14000          | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| ethylbenzene                      | 180            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| xylenes                           | 730            | 50         | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| acetone                           | <500           | 500        | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| carbon disulfide                  | <300           | 300        | ug/l     | 8240      | 4/28/99 19:49      | RAM     |
| 2-butanone                        | <500           | 500        | ug/l     | 8240      | 4/28/99 19:49      | RAM     |

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 016

MW-04S GRAB 4/16/99 @0940

| PARAMETER            | SAMPLE RESULTS | DET. LIMIT | UNITS   | METHOD | ANALYZED DATE/TIME | ANALYST |
|----------------------|----------------|------------|---------|--------|--------------------|---------|
| vinyl acetate        | <2500          | 2500       | ug/l    | 8240   | 4/28/99 19:49      | RAM     |
| 4-methyl-2-pentanone | <2500          | 2500       | ug/l    | 8240   | 4/28/99 19:49      | RAM     |
| 2-hexanone           | <2500          | 2500       | ug/l    | 8240   | 4/28/99 19:49      | RAM     |
| Styrene              | <50            | 50         | ug/l    | 8240   | 4/28/99 19:49      | RAM     |
| O-chlorotoluene      | 2400           | 50         | ug/l    | 8240   | 4/28/99 19:49      | RAM     |
| 1,2-Dichlorobenzene  | 160            | 50         | ug/l    | 8240   | 4/28/99 19:49      | RAM     |
| 1,3-Dichlorobenzene  | <50            | 50         | ug/l    | 8240   | 4/28/99 19:49      | RAM     |
| 1,4-Dichlorobenzene  | <50            | 50         | ug/l    | 8240   | 4/28/99 19:49      | RAM     |
| Surrogates           |                | RANGE      |         | 8240   | 4/28/99 19:49      | RAM     |
| Dibromofluoromethane | 107            |            | 86-118% | 8240   | 4/28/99 19:49      | RAM     |
| Bromofluorobenzene   | 102            |            | 86-115% | 8240   | 4/28/99 19:49      | RAM     |
| Styrene-D8           | 4              |            | 88-110% | 8240   | 4/28/99 19:49      | RAM     |

Volatile organic analyses performed under the operating guidelines  
method 8260.

Increased detection limit due to sample matrix.

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 017

SAMPLE DESCRIPTION: TRIP BLANK GRAB 4/16/99 @1610

| PARAMETER                         | SAMPLE RESULTS | DET. LIMIT | UNITS | METHOD | ANALYZED DATE/TIME | ANALYST |
|-----------------------------------|----------------|------------|-------|--------|--------------------|---------|
| <b>Volatile Organic Compounds</b> |                |            |       |        |                    |         |
| chloromethane                     | < 10           | 10         | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| bromomethane                      | < 10           | 10         | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| vinyl chloride                    | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| dichlorodifluoromethane           | < 10           | 10         | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| chloroethane                      | < 10           | 10         | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| methylene chloride                | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| trichlorofluoromethane            | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| 1,1-dichloroethylene              | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| 1,1-dichloroethane                | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| trans-1,2-dichloroethylene        | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| chloroform                        | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| 1,2-dichloroethane                | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| 1,1,1-Trichloroethane             | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| carbon tetrachloride              | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| bromodichloromethane              | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| 1,2-dichloropropane               | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| cis-1,3-dichloropropylene         | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| trichloroethylene                 | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| trans-1,3-dichloropropylene       | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| 1,1,2-Trichloroethane             | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| Dibromochloromethane              | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| Bromoform                         | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| Tetrachloroethylene               | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| 1,1,2,2-Tetrachloroethane         | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| Chlorobenzene                     | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| 2-chloroethyl vinyl ether         | < 2            | 2          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| dichlorobenzenes                  | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| benzene                           | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| toluene                           | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| ethylbenzene                      | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| xylenes                           | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| acetone                           | < 10           | 10         | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| carbon disulfide                  | < 5            | 5          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| butanone                          | < 10           | 10         | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| vinyl acetate                     | < 50           | 50         | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| 4-methyl-2-pentanone              | < 50           | 50         | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| 2-hexanone                        | < 50           | 50         | ug/l  | 8240   | 4/29/99 15:01      | RAM     |
| Styrene                           | < 1            | 1          | ug/l  | 8240   | 4/29/99 15:01      | RAM     |

R.I. Analytical Laboratories, Inc.

**CERTIFICATE OF ANALYSIS**

Ciba Specialty Chemicals Corp.

Date Received: 4/16/99

Work Order # 9904-03334

Approved by:

R.I. Analytical

Sample #: 017

TRIP BLANK GRAB 4/16/99 @1610

| PARAMETER            | SAMPLE RESULTS | DET. LIMIT | UNITS   | METHOD | ANALYZED DATE/TIME | ANALYST |
|----------------------|----------------|------------|---------|--------|--------------------|---------|
| O-chlorotoluene      | <1             | 1          | ug/l    | 8240   | 4/29/99 15:01      | RAM     |
| 1,2-Dichlorobenzene  | <1             | 1          | ug/l    | 8240   | 4/29/99 15:01      | RAM     |
| 1,3-Dichlorobenzene  | <1             | 1          | ug/l    | 8240   | 4/29/99 15:01      | RAM     |
| 1,4-Dichlorobenzene  | <1             | 1          | ug/l    | 8240   | 4/29/99 15:01      | RAM     |
| Surrogates           |                |            | RANGE   | 8240   | 4/29/99 15:01      | RAM     |
| Dibromofluoromethane | 108            |            | 86-118% | 8240   | 4/29/99 15:01      | RAM     |
| 4-Bromofluorobenzene | 106            |            | 86-115% | 8240   | 4/29/99 15:01      | RAM     |
| Toluene-D8           | 98             |            | 88-110% | 8240   | 4/29/99 15:01      | RAM     |

Volatile organic analyses performed under the operating guidelines

method 8260.

**RI Analytical Laboratories, Inc.**  
**QA/QC Report**

**Client:** CIBA Specialty Chemicals Corp.  
**W.O. #:** 9904-3334  
**Date:** 4/28/99

**- Matrix Spike -**

| Parameter          | Units | Sample # | Sample Conc. | Spike Conc. | Det. Conc. | % Rec. | Date Analyzed |
|--------------------|-------|----------|--------------|-------------|------------|--------|---------------|
| Benzene            | ug/l  | 3334-11  | <1000        | 8000        | 8600       | 108    | 4/28/99       |
| Chlorobenzene      | ug/l  | 3334-11  | <1000        | 8000        | 8500       | 106    | 4/28/99       |
| 1,1-Dichloroethene | ug/l  | 3334-11  | <1000        | 8000        | 9300       | 116    | 4/28/99       |
| Toluene            | ug/l  | 3334-11  | 13000        | 8000        | 19000      | 75     | 4/28/99       |
| Trichloroethylene  | ug/l  | 3334-11  | <1000        | 8000        | 8400       | 105    | 4/28/99       |

| Parameter             | Units | Sample # | Results | Date Analyzed |
|-----------------------|-------|----------|---------|---------------|
| Dibromofluoromethane  | %     | 3334-11  | 112     | 4/28/99       |
| Toluene-d8            | %     | 3334-11  | 98      | 4/28/99       |
| 4-Bromofluorobenzene  | %     | 3334-11  | 93      | 4/28/99       |
| 1,2-Dichloroethane-d4 | %     | 3334-11  | 109     | 4/28/99       |

**- Matrix Spike Duplicate -**

| Parameter          | Units | Sample # | Sample Conc. | Spike Conc. | Det. Conc. | % Rec. | Date Analyzed |
|--------------------|-------|----------|--------------|-------------|------------|--------|---------------|
| Benzene            | ug/l  | 3334-12  | <1000        | 8000        | 8500       | 106    | 4/28/99       |
| Chlorobenzene      | ug/l  | 3334-12  | <1000        | 8000        | 8500       | 106    | 4/28/99       |
| 1,1-Dichloroethene | ug/l  | 3334-12  | <1000        | 8000        | 8700       | 109    | 4/28/99       |
| Toluene            | ug/l  | 3334-12  | 13000        | 8000        | 20000      | 88     | 4/28/99       |
| Trichloroethylene  | ug/l  | 3334-12  | <1000        | 8000        | 9000       | 113    | 4/28/99       |

| Parameter             | Units | Sample # | Results | Date Analyzed |
|-----------------------|-------|----------|---------|---------------|
| Dibromofluoromethane  | %     | 3334-12  | 102     | 4/28/99       |
| Toluene-d8            | %     | 3334-12  | 103     | 4/28/99       |
| 4-Bromofluorobenzene  | %     | 3334-12  | 90      | 4/28/99       |
| 1,2-Dichloroethane-d4 | %     | 3334-12  | 117     | 4/28/99       |

**Analytical Laboratories, Inc.**

41 Illinois Avenue  
Warwick, RI 02888  
Phone: (401) 737-8500  
Fax: (401) 738-1970

950 Boylston Street, Unit 102  
Newton Highlands, MA 02461  
Phone: (617) 965-5133  
Fax: (617) 965-5624

**CHAIN OF CUSTODY RECORD**

Page 2 of 2

**Container Type Codes:**  
P=Plastic AG=Amber Glass  
G=Glass St=Sterile  
V=Vial  
O=Other (describe)

**Preservative Codes:**  
NP=Non preserved S=Sulfuric  
I=Cooled 4°C H=HCL  
N=Nitric SH=NaOH  
M=Methanol SB=NaHSO4

**Matrix Codes:**  
GW=Groundwater S=Soil  
WW=Wastewater SI=Sludge  
DW=Drinking water A=Air  
O=Other (describe) B=Bulk/Solid

| Date Collected | Time Collected | Sample ID | G=Grab<br>C=Comp. | Containers # + (code) | Preservative (code) | Matrix (code) | Analysis Request                   |
|----------------|----------------|-----------|-------------------|-----------------------|---------------------|---------------|------------------------------------|
| 4-14-99        | 1315           | TRIP BIK  | G                 | 2V                    | H                   | GW            | 8240*                              |
| 4-15-99        | 0915           | Field BIK | G                 | 2V                    | H                   | GW            | 8240*                              |
| 4-16-99        | 0915           | MW 125    | G                 | 3V                    | H                   | GW            | 8240* pH, Temp, conc, D.O. (field) |
| 4-16-99        | 0940           | MW04S     | G                 | 3V                    | H                   | GW            | 8240* " "                          |
| 4-15-99        | 1610           | TRIP BLK  | G                 | 2V                    | H                   | GW            | 8240*                              |
|                |                |           |                   |                       |                     |               |                                    |
|                |                |           |                   |                       |                     |               |                                    |
|                |                |           |                   |                       |                     |               |                                    |
|                |                |           |                   |                       |                     |               |                                    |
|                |                |           |                   |                       |                     |               |                                    |
|                |                |           |                   |                       |                     |               |                                    |

**Client Information**Company Name: *CIBA*

Address:

City / State / Zip:

Phone:

Fax:

Contact: *Barry Cohen***Project Information**Project Name / Location: *CIBA SITE CRANSTON*

P.O. Number / Project Number:

Project Manager / Report To:

Sampled by: *Paul / CATHAL*

Reference Proposal:

| Relinquished by: | Date    | Time | Received by:      | Date    | Time |
|------------------|---------|------|-------------------|---------|------|
| <i>J. P. D.</i>  | 4-15-99 | 1115 | <i>Alma Cohen</i> | 4/15/99 | 1500 |
|                  |         |      |                   |         |      |
|                  |         |      |                   |         |      |

| Turn Around Time:  |
|--|
| <input checked="" type="checkbox"/> Normal                       |
| <input type="checkbox"/> 5 business days<br>Surcharges may apply |
| <input type="checkbox"/> Rush _____ (business days)              |

**Project Comments:**

\* SEE COC 1 of 2

|  |
|--|
| <input type="checkbox"/> RIAL USE ONLY:            |
| <input type="checkbox"/> Pick-Up Only              |
| <input checked="" type="checkbox"/> RIAL Sampled   |
| <input checked="" type="checkbox"/> Shipped on Ice |
| RIAL W.O. #  |

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**CHAIN OF CUSTODY RECORD**

Page / of 2

**Container Type Codes:**  
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G=Glass St=Sterile  
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NP=Non preserved S=Sulfuric  
I=Cooled 4°C H=HCL  
N=Nitric SH=NaOH  
M=Methanol SB=NaHSO4

**Matrix Codes:**  
GW=Groundwater S=Soil  
WW=Wastewater Sl=Sludge  
DW=Drinking water A=Air  
O=Other (describe) B=Bulk/Solid

| Date Collected | Time Collected | Sample ID | G=Grab<br>C=Comp. | Containers # + (code) | Preservative (code) | Matrix (code) | Analysis Request                            |
|----------------|----------------|-----------|-------------------|-----------------------|---------------------|---------------|---|
| 4-15-99        | 0930           | MW-02 S   | G                 | 3V                    | H                   | GW            | 8240* pH, Scavo, Temp, DO. → Field ANALYZED |
|                | 1015           | SW-120    | G                 | 3V                    | H                   | GW            | SEE ATTACHED                                |
|                | 1040           | P-35S     | G                 | 3V                    | H                   | GW            |   |
|                | 1105           | P-36S     | G                 | 3V                    | H                   | GW            |   |
|                | 1210           | SW-130    | G                 | 3V                    | H                   | GW            |   |
|                | 1225           | MW-01 S   | G                 | 3V                    | H                   | GW            |   |
|                | 1345           | SW-110    | G                 | 3V                    | H                   | GW            |   |
|                | 1405           | P-37S     | G                 | 3V                    | H                   | GW            |   |
|                | 1440           | P-38S     | G                 | 3V                    | H                   | GW            |   |
| ↓              | 1510           | MW-21 S   | G                 | 6V                    | H                   | GW            | **  |

**Client Information**

|                        |   |
|------------------------|---|
| Company Name: Ciba -   | Project Name / Location: CIBA SITE CLANSTON |
| Address: Toms RIVER NJ | P.O. Number / Project Number:               |
| City / State / Zip:    | Project Manager / Report To:                |
| Phone: 732-914-2537    | Sampled by: Paul Perrotti / CATHAC          |
| Contact: Barry Cohen   | Reference Proposal:                         |

| Relinquished by: | Date    | Time | Received by: | Date    | Time |
|------------------|---------|------|--------------|---------|------|
| RZ               | 4-15-99 | 1445 | Pma Cohen    | 4/15/99 | 1500 |
|                  |         |      |              |         |      |
|                  |         |      |              |         |      |
|                  |         |      |              |         |      |

| Turn Around Time:  |
|--|
| <input checked="" type="checkbox"/> Normal                       |
| <input type="checkbox"/> 5 business days<br>Surcharges may apply |
| <input type="checkbox"/> Rush (business days)                    |

|                   |  |   |                             |
|-------------------|--|---|-----------------------------|
| Project Comments: | * O-chlorotoluene<br>1,2 dichlorobenzene <94ppb<br>Chlorobenzene <1700 | O-chlorotoluene <1500<br>Toluene <1700<br>Xylenes <76 | * * RUV MS,MSD<br>on MW-21S |
|-------------------|--|---|-----------------------------|

| RIAL USE ONLY:                                     |
|--|
| <input type="checkbox"/> Pick-Up Only              |
| <input checked="" type="checkbox"/> RIAL Sampled   |
| <input checked="" type="checkbox"/> Shipped on Ice |
| RIAL W.O. # 334                                    |

**APPENDIX C**  
**TIME-SERIES**  
**FOR**  
**UPGRADIENT WELLS**

**Table 3**  
**UPGRADIENT WELLS**  
**Cumulative Results for Chemicals Of Concern**  
**(Units in ppb)**

| Well No. | Date Sampled | 1,2-Dichloro-benzene | Chloro-benzene | o-Chloro-toluene | Toluene | Xylenes |
|----------|--------------|----------------------|----------------|------------------|---------|---------|
| MW-004S  | 6-Mar-96     | 89                   | 210            | 1700             | 2100    | 300     |
| MW-004S  | 1-May-96     | 88                   | 130            | 1200             | 1500    | 160     |
| MW-004S  | 9-Apr-97     | 43                   | 44             | 160              | 88      | 100     |
| MW-004S  | 8-Oct-97     | 72                   | 41             | 660              | 370     | 480     |
| MW-004S  | 28-Apr-98    | 40                   | 220            | 1200             | 2700    | 130     |
| MW-004S  | 15-Oct-98    | 100 U                | 580            | 300              | 100 U   | 100 U   |
| MW-004S  | 16-Apr-99    | 50 U                 | 50             | 50               | 50 U    | 730     |
| MW-012S  | 5-Mar-96     | 4.3 U                | 2.4 J          | 2 U              | 2.8 U   | 75      |
| MW-012S  | 2-May-96     | 4.3 U                | 1.5 J          | 2 U              | 2.8 U   | 42      |
| MW-012S  | 10-Apr-97    | 1 U                  | 1 U            | 1 U              | 1 U     | 1 U     |
| MW-012S  | 8-Oct-97     | 1 U                  | 1 U            | 1 U              | 1 U     | 12      |
| MW-012S  | 28-Apr-98    | 1 U                  | 1 U            | 1 U              | 1 U     | 65      |
| MW-012S  | 15-Oct-98    | 10 U                 | 10 U           | 10 U             | 10 U    | 87      |
| MW-012S  | 16-Apr-99    | 10 U                 | 12             | 10 U             | 10 U    | 24      |
| MW-021S  | 6-Mar-96     | 43 U                 | 30 U           | 480              | 12 J    | 34 U    |
| MW-021S  | 1-May-96     | 22 U                 | 5 J            | 820              | 15      | 17 U    |
| MW-021S  | 10-Apr-97    | 1 U                  | 1 U            | 120              | 1       | 6       |
| MW-021S  | 27-Oct-97    | 30                   | 49             | 24000            | 20000   | 1600    |
| MW-021S  | 28-Apr-98    | 1 U                  | 1 U            | 54               | 1 U     | 1 U     |
| MW-021S  | 15-Oct-98    | 100 U                | 100 U          | 7900             | 2500    | 580     |
| MW-021S  | 16-Apr-99    | 50 U                 | 50 U           | 9000             | 50 U    | 520     |

MPS = Media Protection Standard

U = Nondetect with detection limit given

J = Estimated value

1,2 Dichlorobenzene MPS=94 PPB

Chlorobenzene MPS=1700 PPB

o-chlorotoluene MPS=1500 ppb

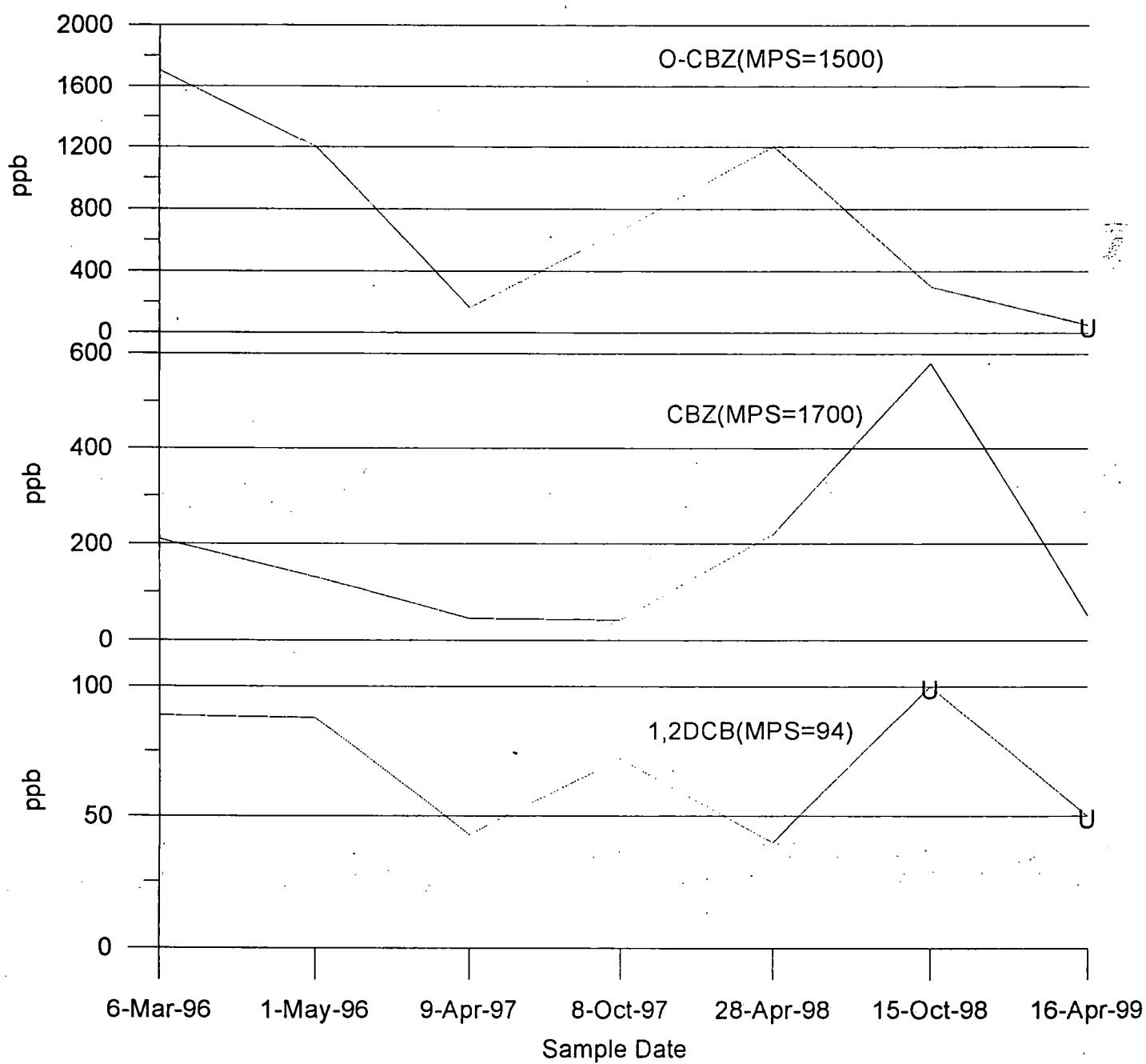
toluene MPS=1700 ppb

xylanes MPS=76 ppb

Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-004S  
Upgradient Well

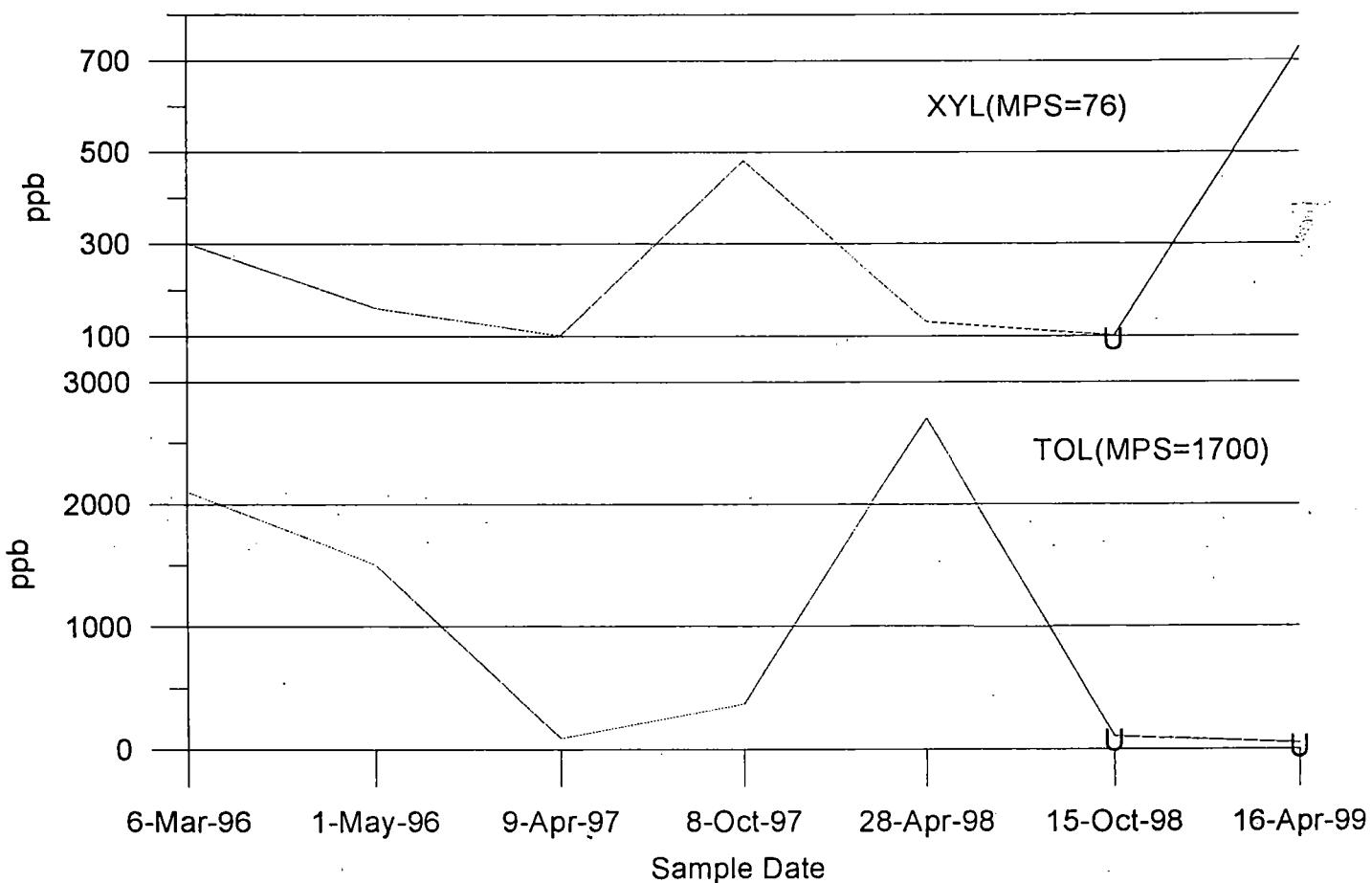
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-004S  
Upgradient Well

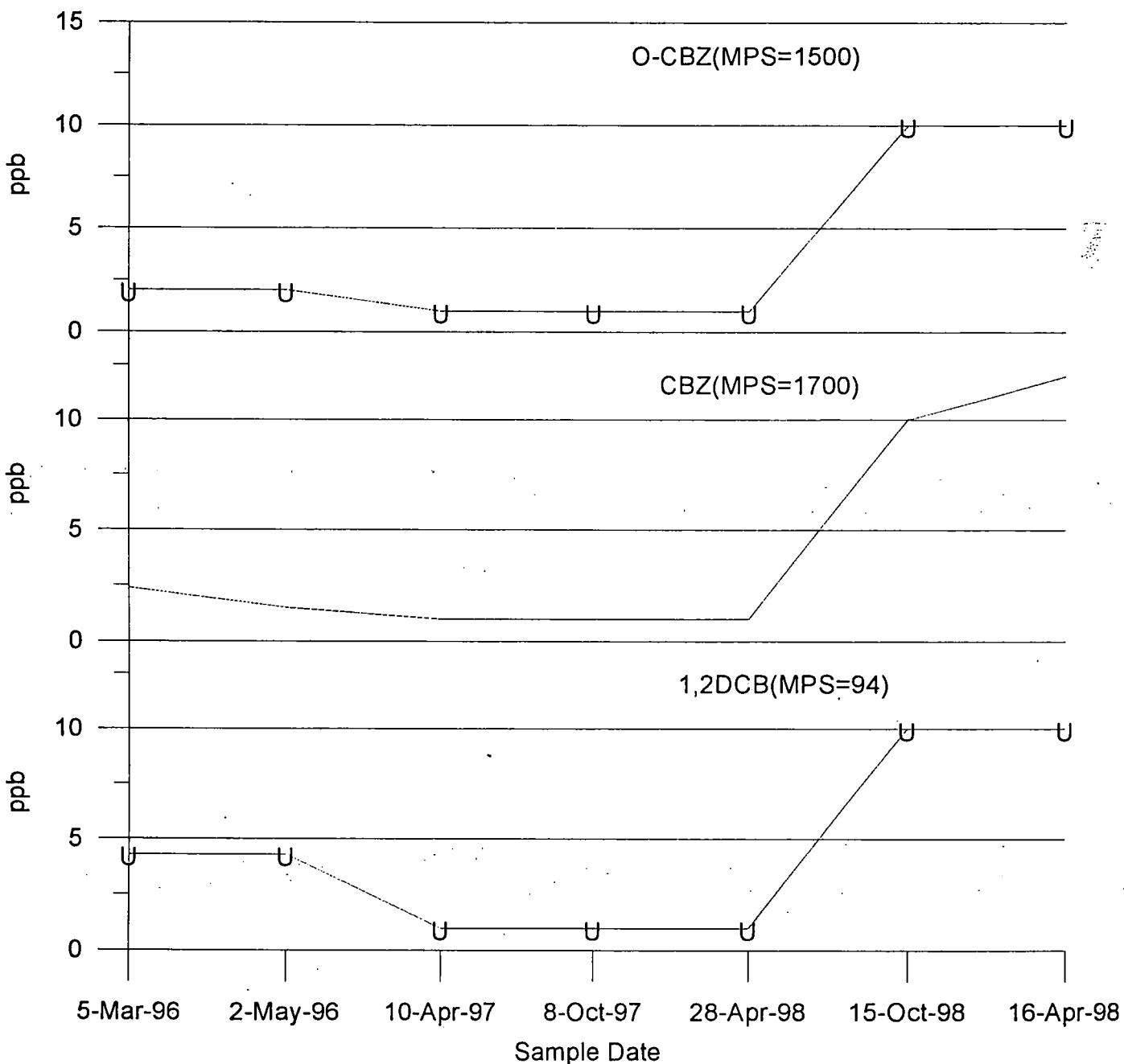
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-012S  
Upgradient Well

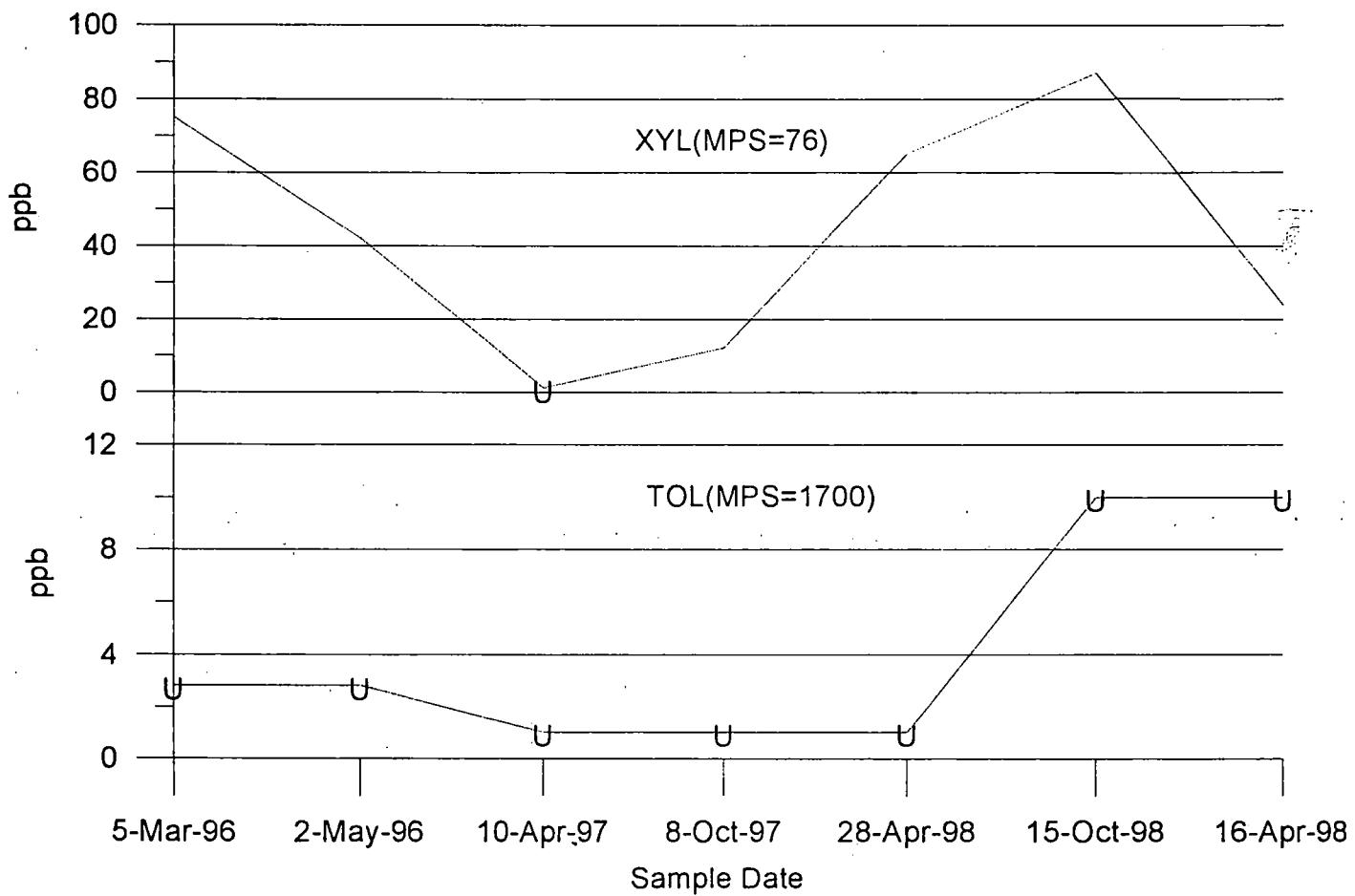
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-012S  
Upgradient Well

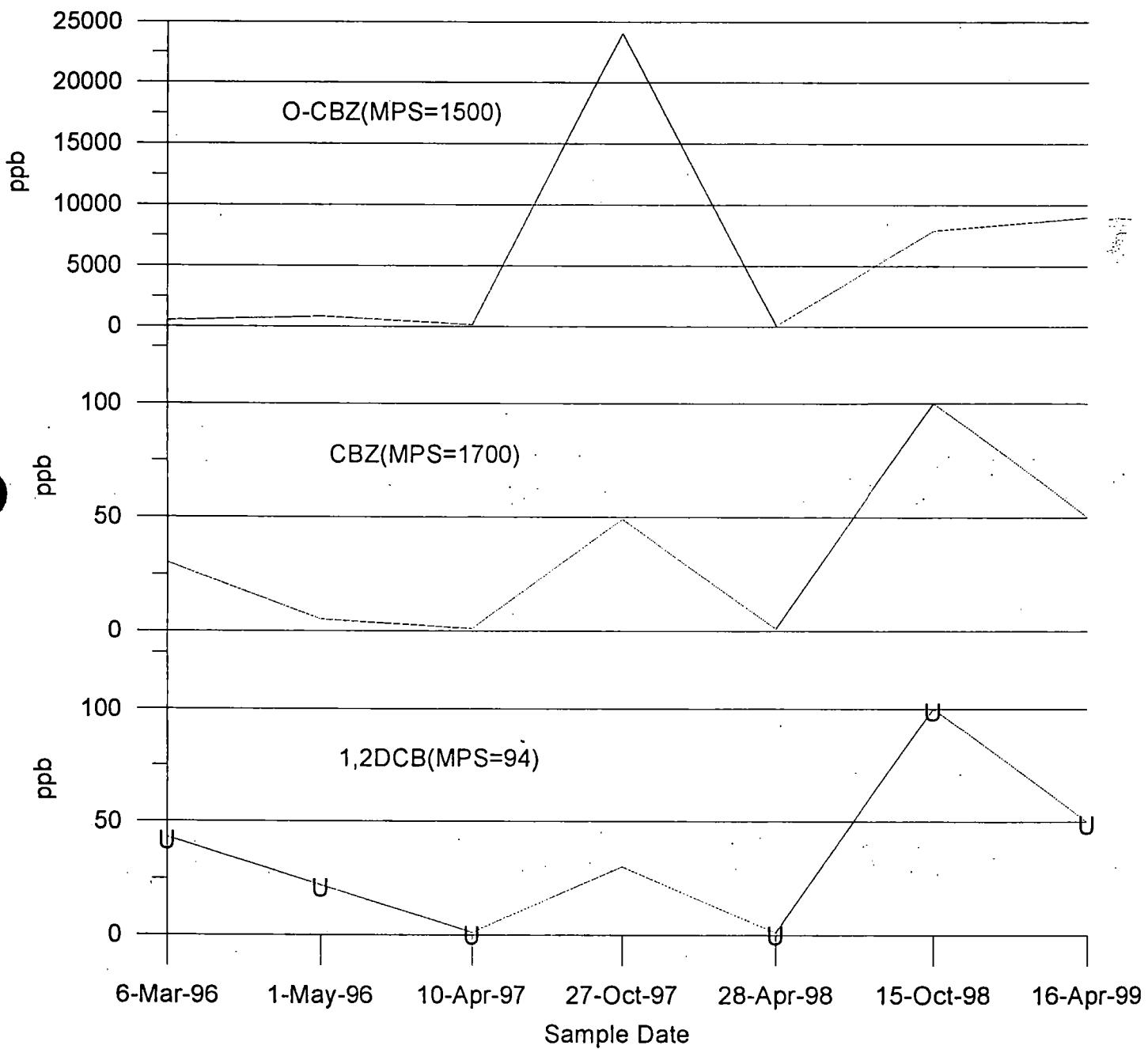
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"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-021S  
Upgradient Well

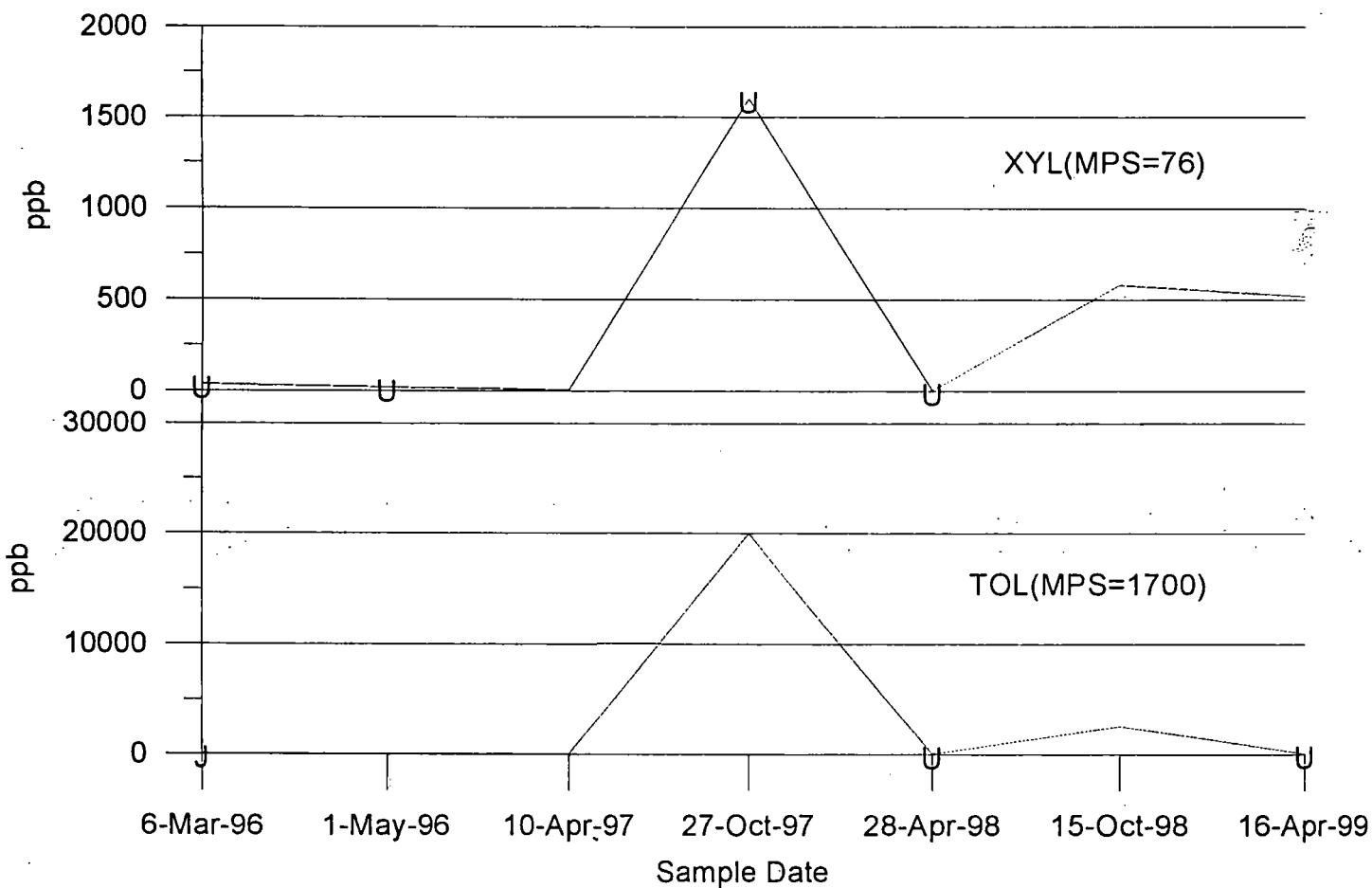
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Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-021S  
Upgradient Well

"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



**APPENDIX D**  
**TIME-SERIES GRAPHS**  
**FOR**  
**BULKHEAD WELLS**

**Table 4**  
**BULKHEAD WELLS**  
**Cumulative Results for Chemicals Of Concern**  
**(Units in ppb)**

| Well No. | Date Sampled | 1,2-Dichloro-benzene | Chloro-benzene | o-Chloro-toluene | Toluene | Xylenes |
|----------|--------------|----------------------|----------------|------------------|---------|---------|
| MW-001S  | 6-Mar-96     | 22 U                 | 2000           | 10 U             | 16      | 18      |
| MW-001S  | 1-May-96     | 110 U                | 5500           | 50 U             | 30 J    | 85 U    |
| MW-001S  | 10-Apr-97    | 1                    | 93             | 1 U              | 9       | 7       |
| MW-001S  | 7-Oct-97     | 1                    | 640            | 30               | 23      | 2       |
| MW-001S  | 27-Apr-98    | 1 U                  | 2800           | 1 U              | 1       | 2       |
| MW-001S  | 15-Oct-98    | 100 U                | 2800           | 100 U            | 100 U   | 100 U   |
| MW-001S  | 16-Apr-99    | 50 U                 | 1100           | 50 U             | 50 U    | 50 U    |
| MW-002S  | 5-Mar-96     | 340                  | 3200           | 50 U             | 200     | 85 U    |
| MW-002S  | 30-Apr-96    | 44 J                 | 2500           | 50 U             | 52 J    | 85 U    |
| MW-002S  | 8-Apr-97     | 20                   | 64             | 1 U              | 46      | 18      |
| MW-002S  | 7-Oct-97     | 90                   | 440            | 100              | 97      | 31      |
| MW-002S  | 27-Apr-98    | 22                   | 500            | 1 U              | 88      | 28      |
| MW-002S  | 15-Oct-98    | 28                   | 5200           | 1 U              | 92      | 34      |
| MW-002S  | 16-Apr-99    | 140                  | 2260           | 10 U             | 420     | 33      |
| P-035S   | 8-Apr-97     | 22                   | 74             | 1 U              | 4       | 12      |
| P-035S   | 7-Oct-97     | 240                  | 710            | 2                | 10      | 12      |
| P-035S   | 27-Apr-98    | 42                   | 360            | 1 U              | 2       | 10      |
| P-035S   | 15-Oct-98    | 140                  | 2100           | 10 U             | 130     | 80      |
| P-035S   | 16-Apr-99    | 20                   | 480            | 10 U             | 10 U    | 10 U    |
| P-036S   | 6-Mar-96     | 22 U                 | 440            | 10 U             | 14 U    | 17 U    |
| P-036S   | 1-May-96     | 22 U                 | 460            | 30               | 14 U    | 17 U    |
| P-036S   | 8-Apr-97     | 1 U                  | 72             | 1 U              | 1 U     | 2       |
| P-036S   | 7-Oct-97     | 1 U                  | 35             | 9                | 2       | 1 U     |
| P-036S   | 27-Apr-98    | 1 U                  | 260            | 1 U              | 1 U     | 1 U     |
| P-036S   | 15-Oct-98    | 1 U                  | 230            | 1 U              | 1 U     | 1       |
| P-036S   | 16-Apr-99    | 10 U                 | 200            | 10 U             | 10 U    | 10 U    |
| P-037S   | 9-Apr-97     | 2 U                  | 54             | 16               | 1 U     | 1       |
| P-037S   | 8-Oct-97     | 2                    | 50             | 13               | 1 U     | 1 U     |
| P-037S   | 28-Apr-98    | 2                    | 420            | 8                | 1 U     | 1 U     |
| P-037S   | 15-Oct-98    | 30 U                 | 540            | 30 U             | 30 U    | 30 U    |
| P-037S   | 16-Apr-99    | 10 U                 | 210            | 10 U             | 10 U    | 10 U    |
| P-038S   | 6-Mar-96     | 4.3 U                | 2.4 J          | 2 U              | 1.3 J   | 3.4 U   |
| P-038S   | 1-May-96     | 4.3 U                | 1.2 J          | 2 U              | 2.8 U   | 3.4 U   |
| P-038S   | 9-Apr-97     | 1 U                  | 1 U            | 1 U              | 1 U     | 1 U     |
| P-038S   | 8-Oct-97     | 1 U                  | 1 U            | 1 U              | 1 U     | 1 U     |
| P-038S   | 28-Apr-98    | 1 U                  | 1 U            | 1 U              | 1 U     | 1 U     |
| P-038S   | 15-Oct-98    | 1 U                  | 2              | 1 U              | 1 U     | 1 U     |
| P-038S   | 16-Apr-99    | 1 U                  | 1 U            | 1 U              | 1 U     | 1 U     |

MPS = Media Protection Standard

U = Nondetect with detection limit given

J = Estimated value

1,2 Dichlorobenzene MPS=94 PPB

Chlorobenzene MPS=1700 PPB

o-chlorotoluene MPS=1500 ppb

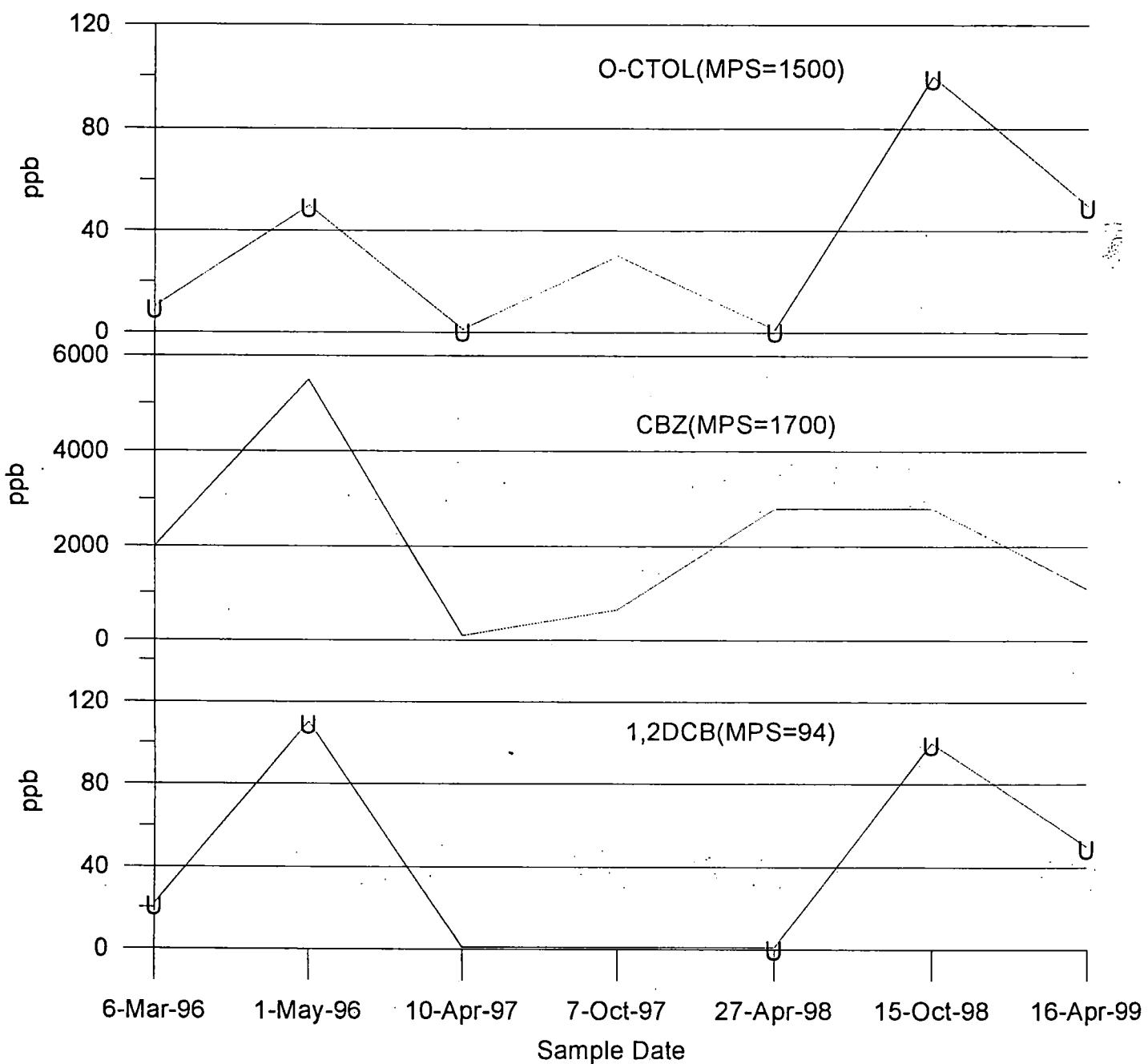
toluene MPS=1700 ppb

xylenes MPS=76 ppb

Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-001S  
Along Bulkhead

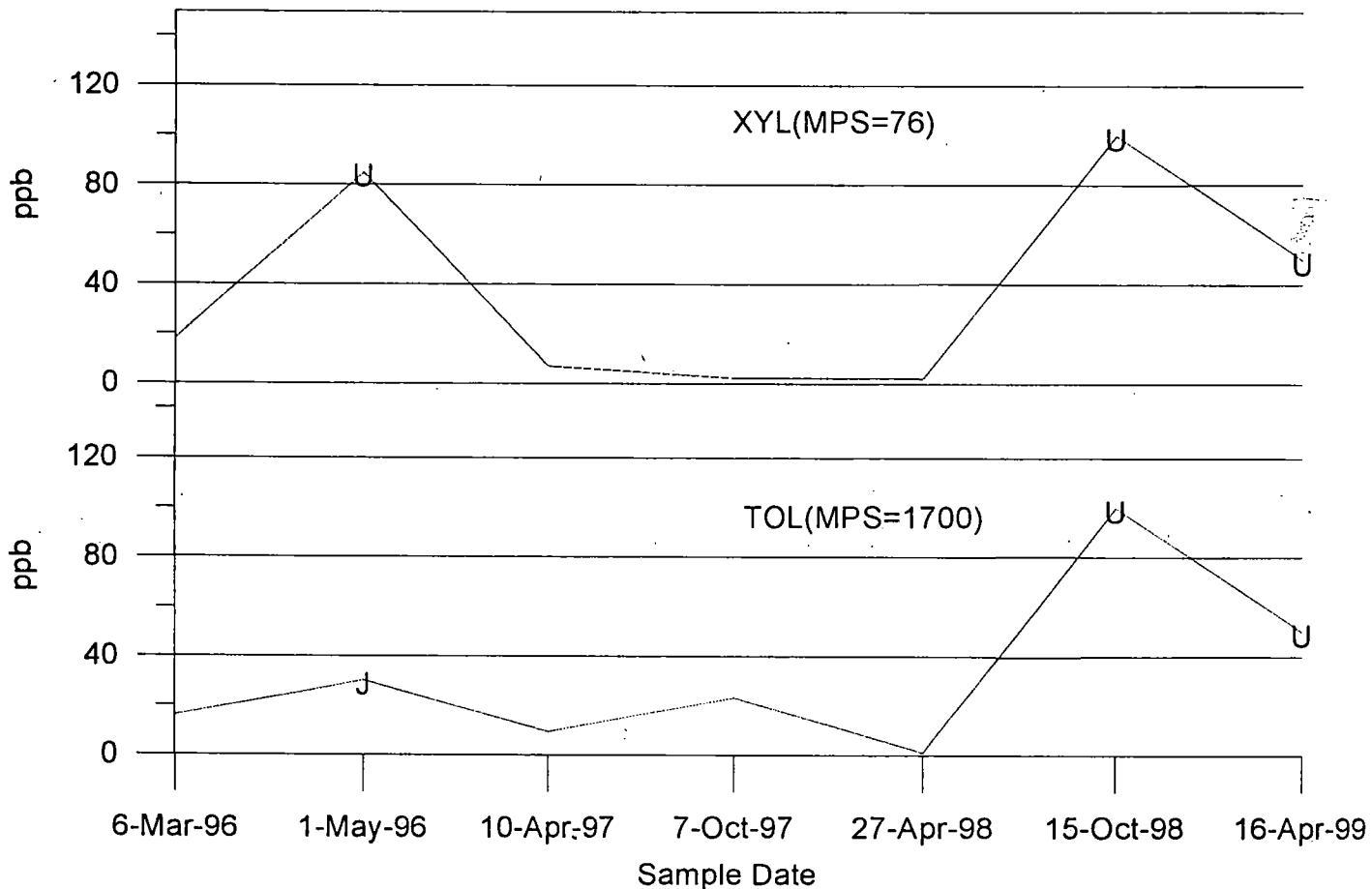
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"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-001S  
Along Bulkhead

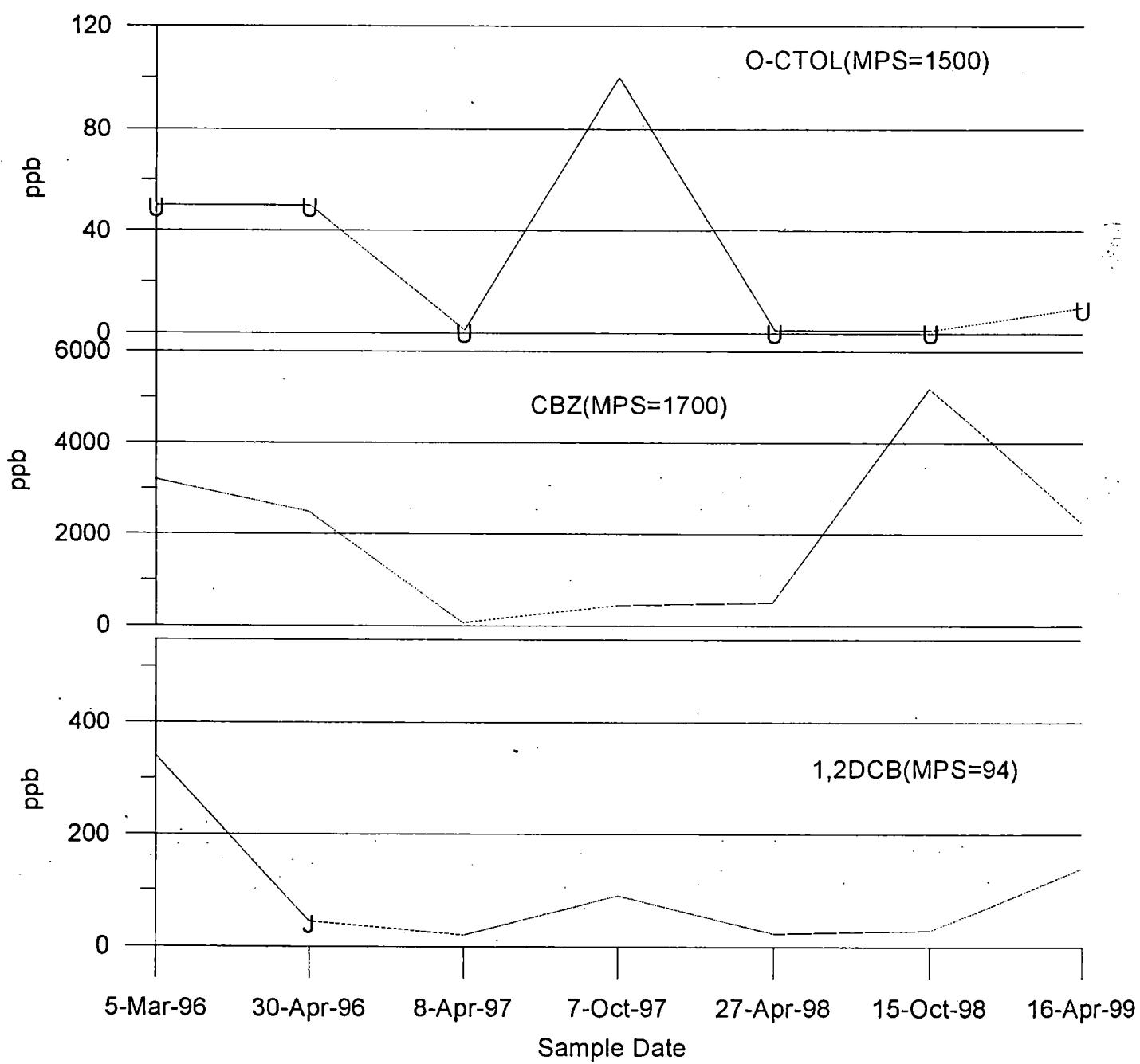
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"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-002S  
Along Bulkhead

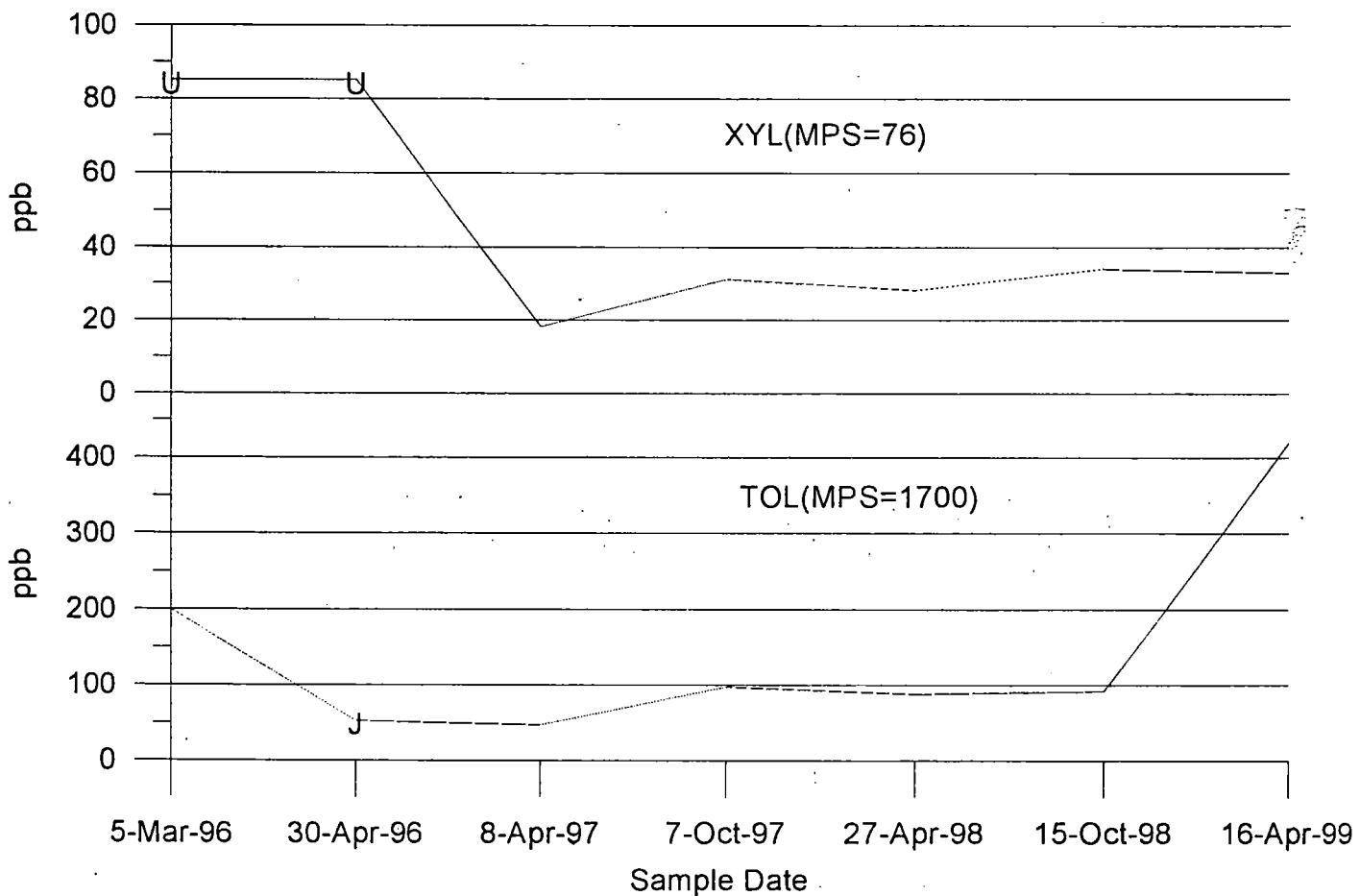
"U"=Nondetect  
"J"=Estimated Value  
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Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well MW-002S  
Along Bulkhead

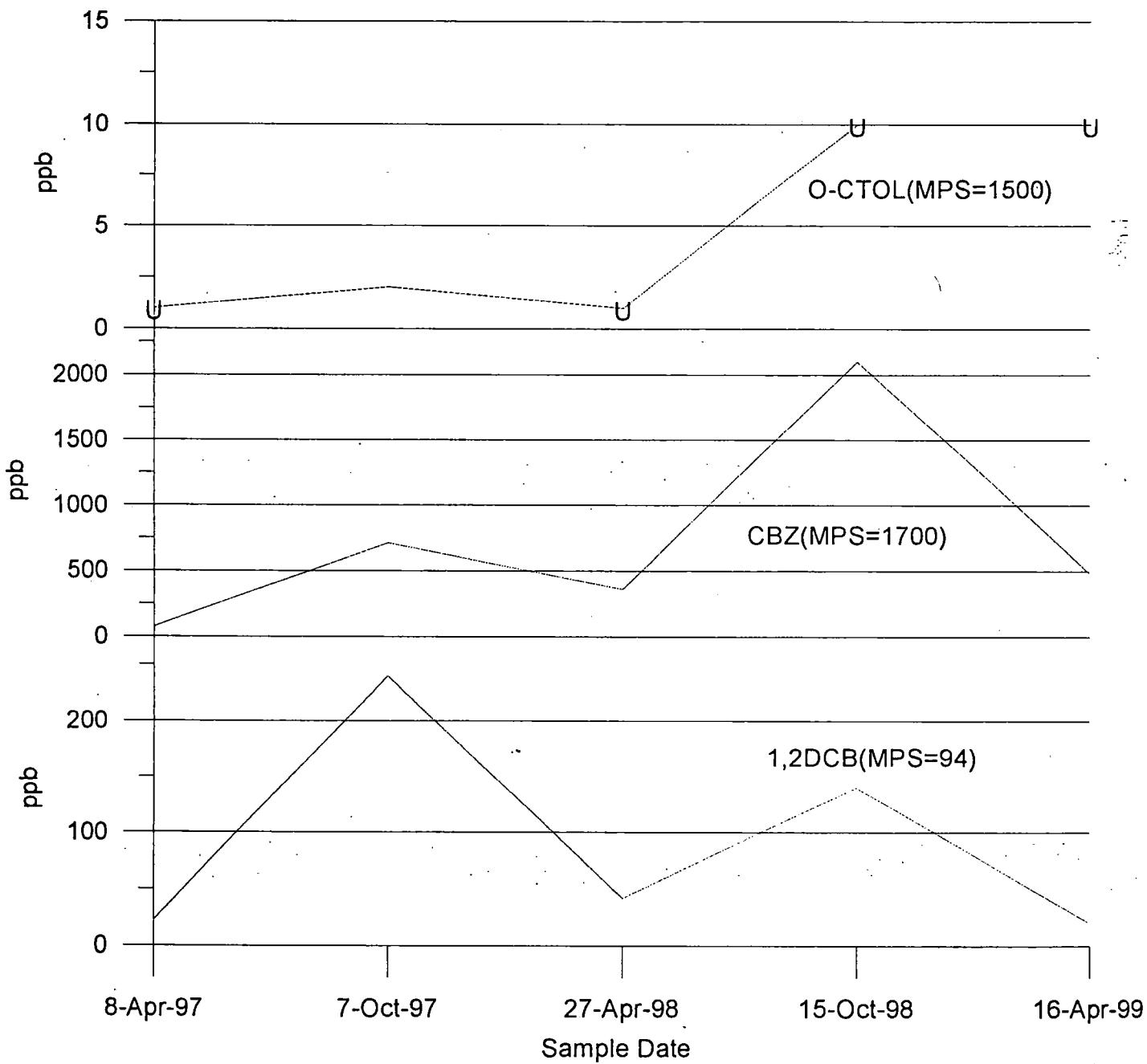
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Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well P-035S  
Along Bulkhead

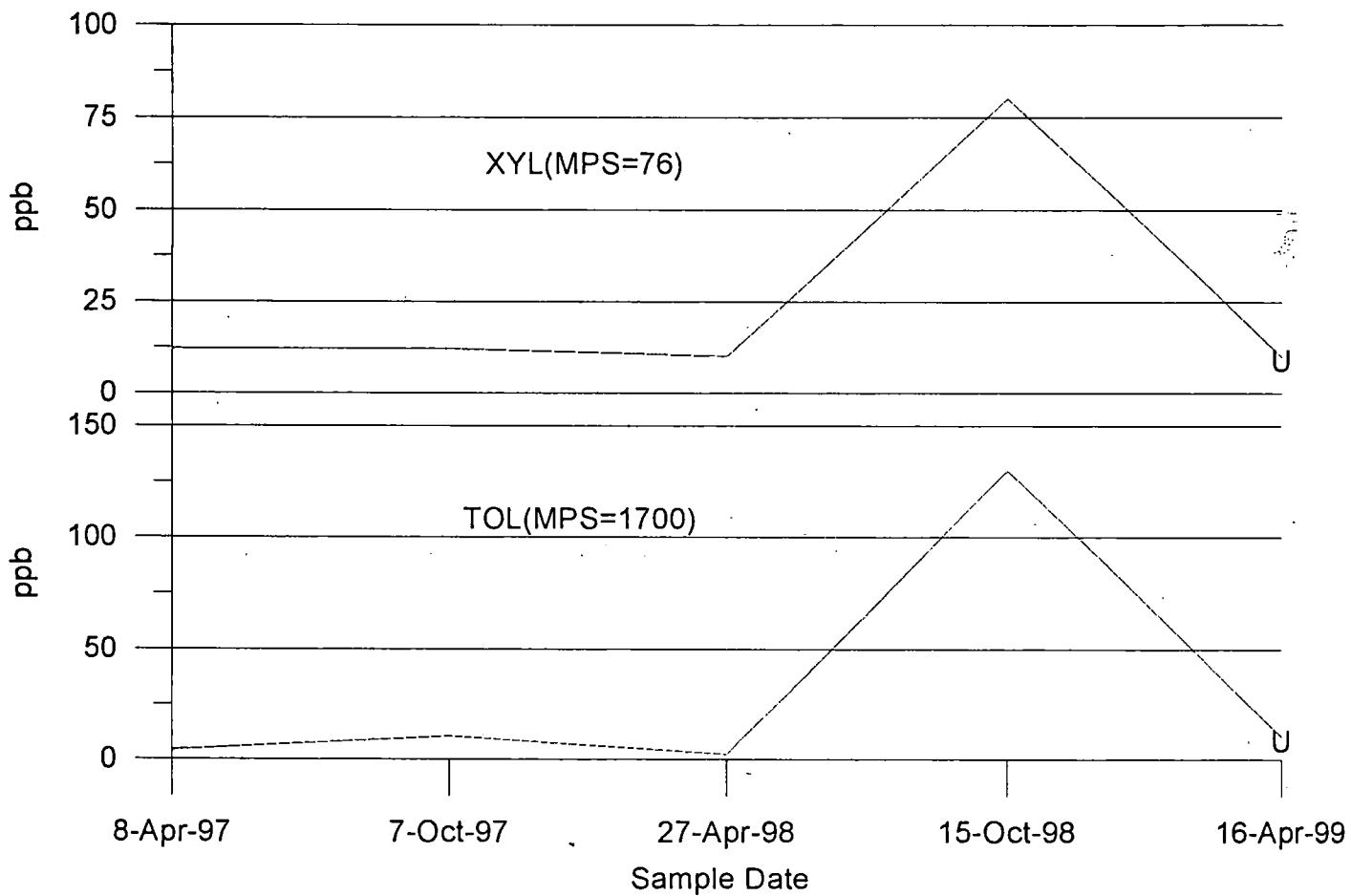
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MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well P-035S  
Along Bulkhead

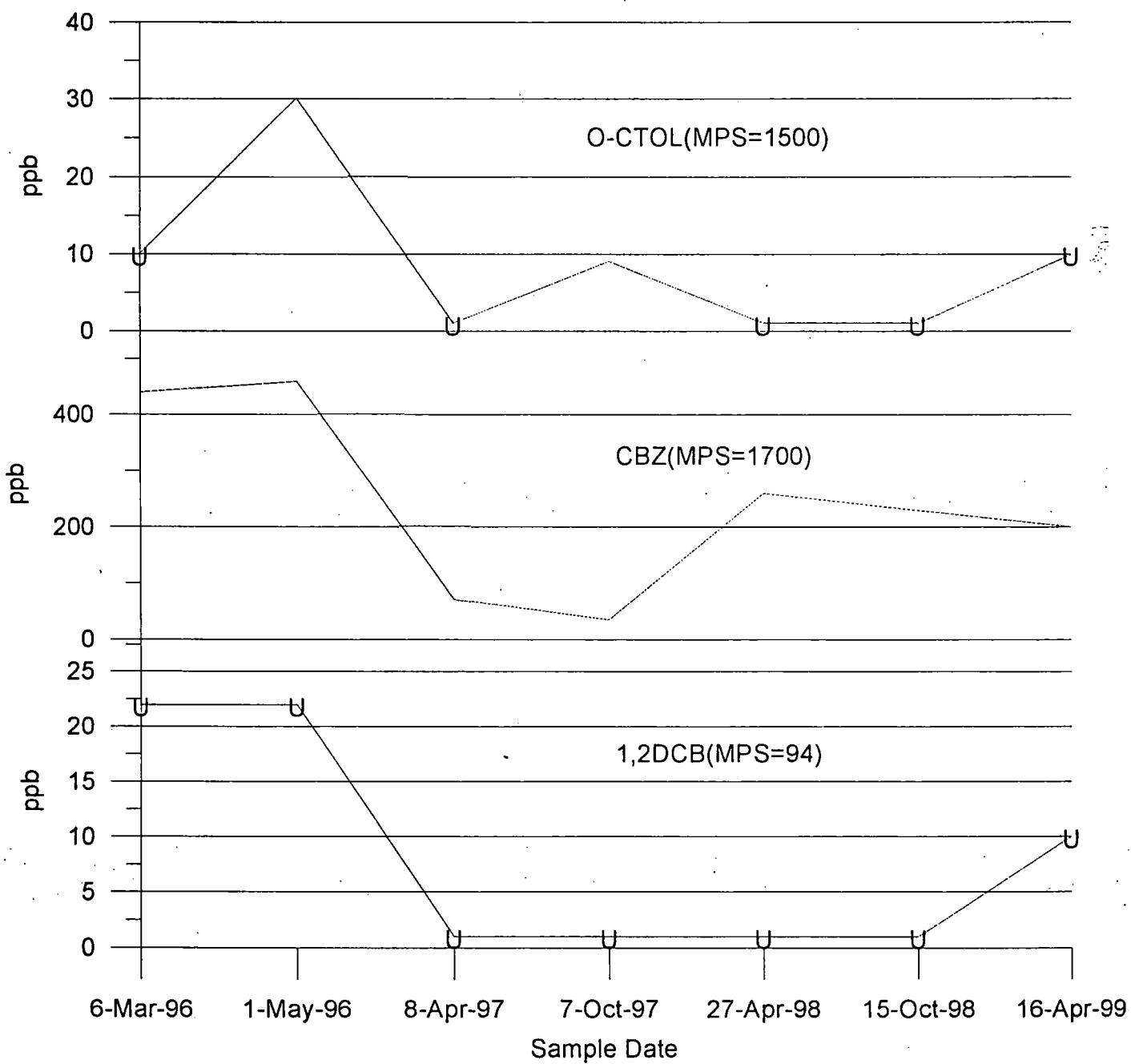
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MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well P-036S  
Along Bulkhead

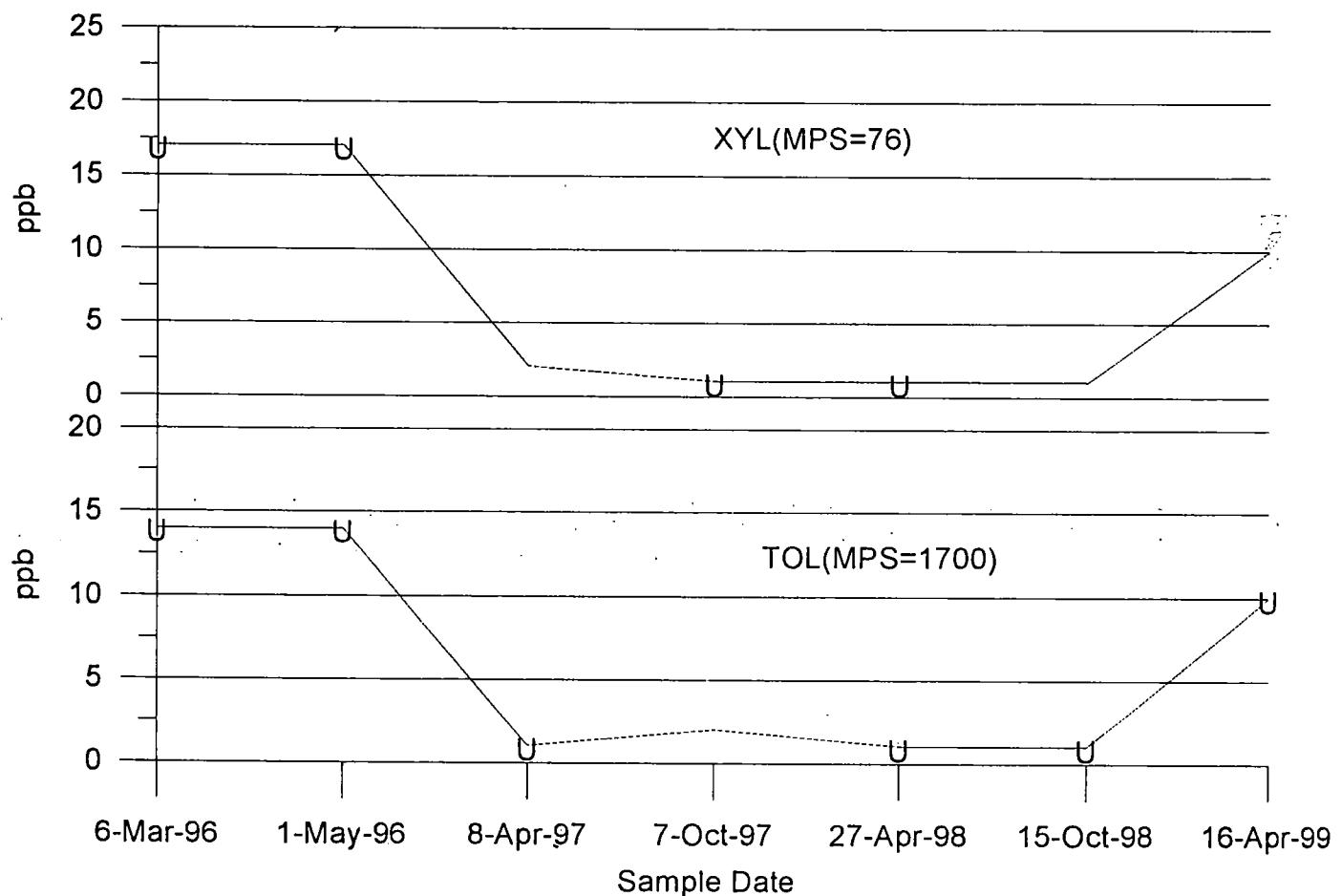
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"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well P-036S  
Along Bulkhead

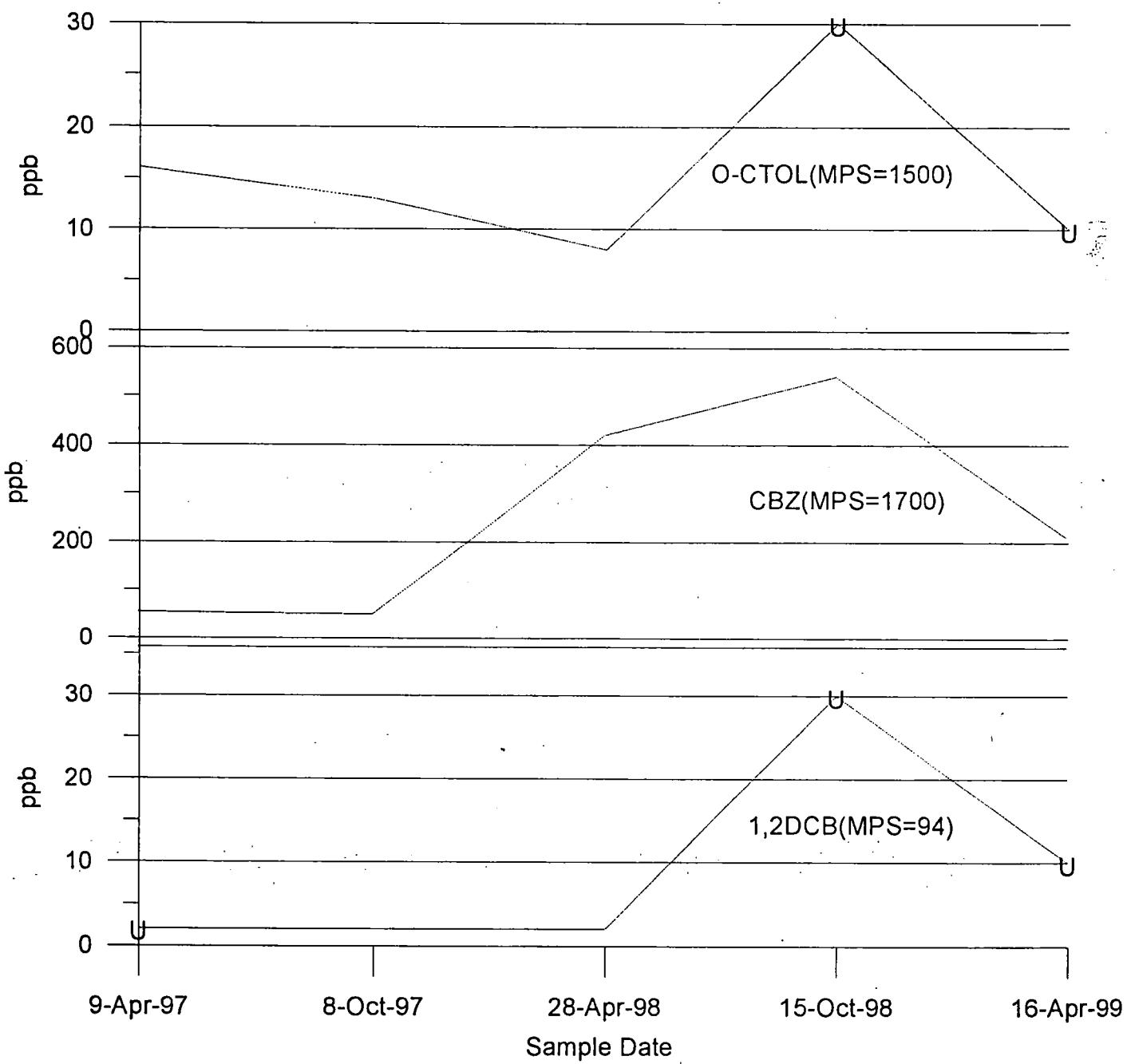
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MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well P-037S  
Along Bulkhead

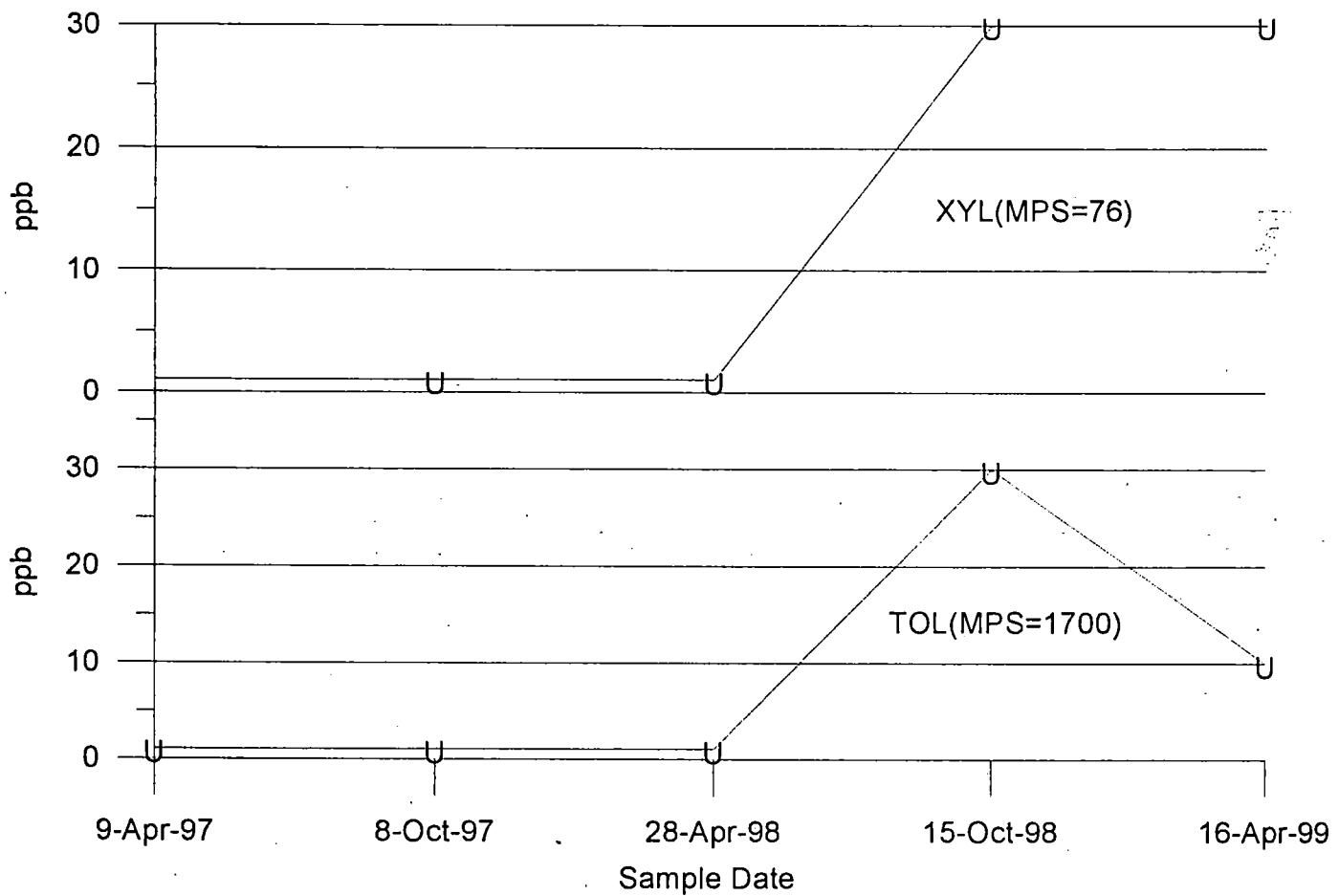
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Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well P-037S  
Along Bulkhead

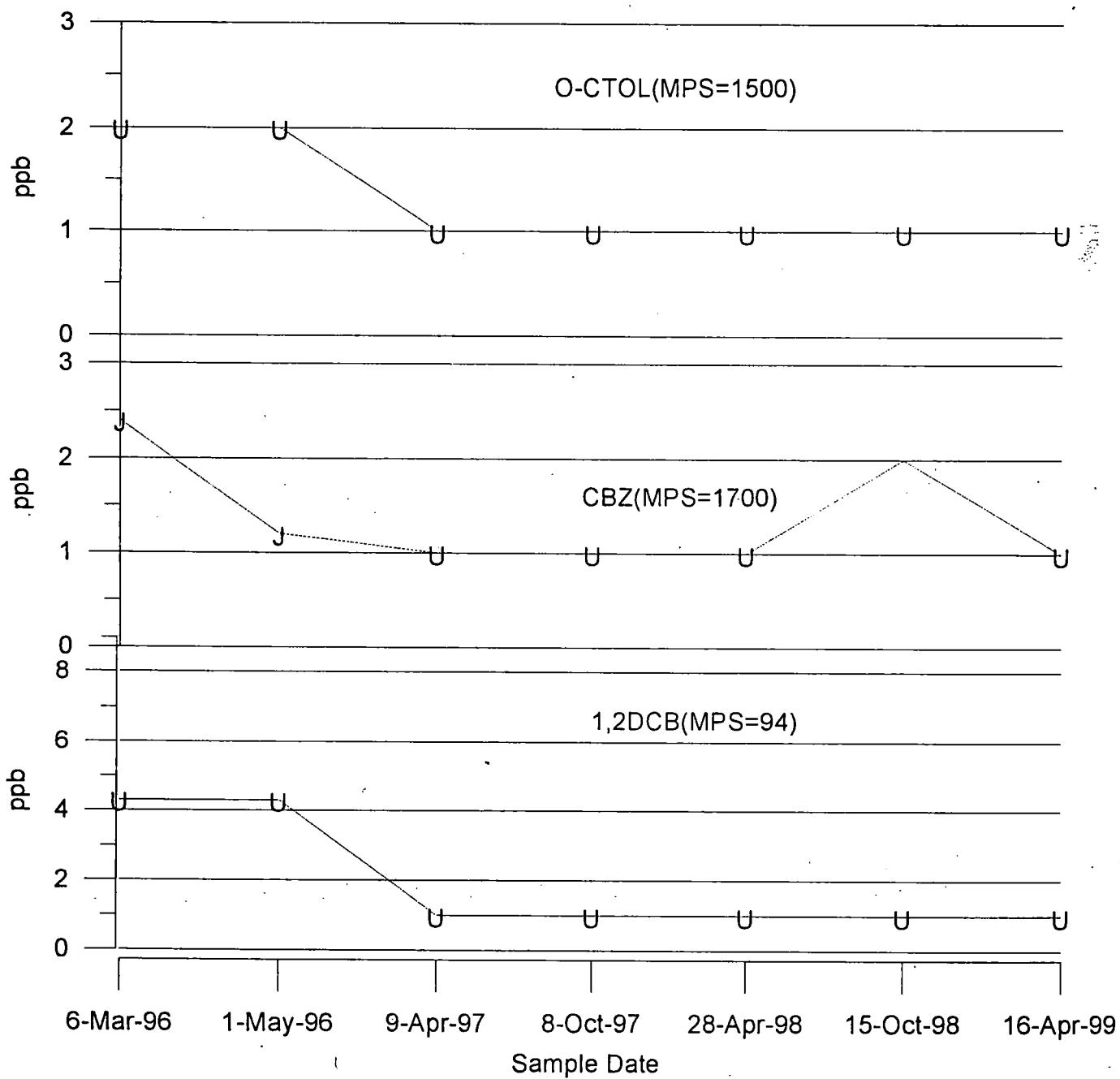
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"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well P-038S  
Along Bulkhead

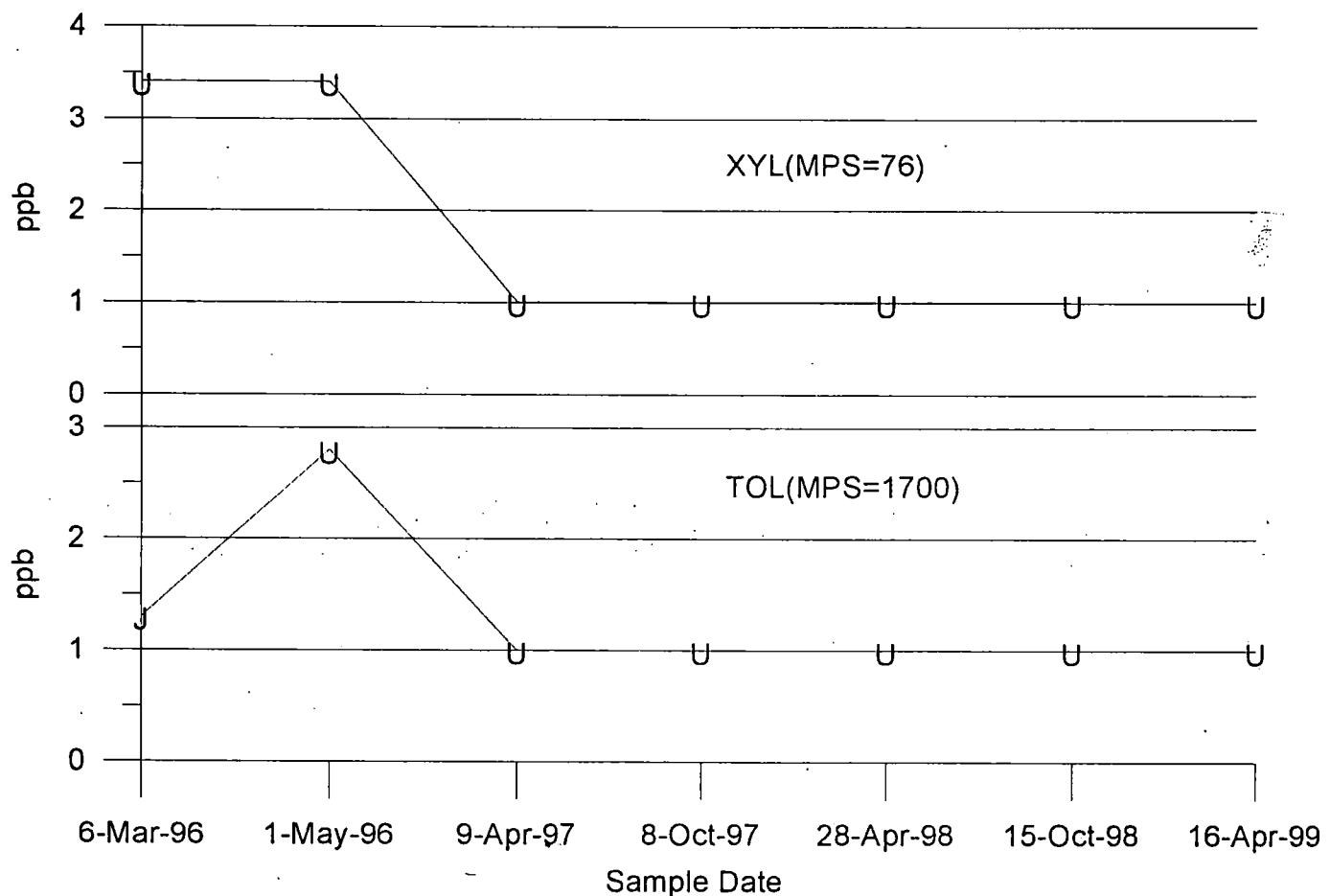
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well P-038S  
Along Bulkhead

"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



**APPENDIX E**  
**TIME-SERIES GRAPHS**  
**FOR**  
**IN-RIVER WELLS**

**Table 5**  
**IN-RIVER WELLS**  
**Cumulative Results for Chemicals Of Concern**  
**(Units in ppb)**

| Well No. | Date Sampled | 1,2-Dichlorobenzene | Chlorobenzene | o-Chlorotoluene | Toluene | Xylenes |
|----------|--------------|---------------------|---------------|-----------------|---------|---------|
| SW-110   | 6-Mar-96     | 54                  | 1600          | 55              | 460     | 34 U    |
| SW-110   | 2-May-96     | 63 J                | 1600          | 40 U            | 220     | 68 U    |
| SW-110   | 10-Apr-97    | 23                  | 110           | 1               | 62      | 8       |
| SW-110   | 8-Oct-97     | 1 U                 | 1 U           | 1 U             | 1 U     | 1 U     |
| SW-110   | 27-Apr-98    | 21                  | 1100          | 2               | 170     | 6       |
| SW-110   | 15-Oct-98    | 100 U               | 440           | 100 U           | 100 U   | 100 U   |
| SW-110   | 16-Apr-99    | 50 U                | 670           | 50 U            | 50 U    | 50 U    |
| SW-120   | 5-Mar-96     | 4.3 U               | 63            | 2 U             | 2.8 U   | 3.4 U   |
| SW-120   | 30-Apr-96    | 4.3 U               | 70            | 2 U             | 2.8 U   | 3.4 U   |
| SW-120   | 8-Apr-97     | 1 U                 | 43            | 1 U             | 1 U     | 1 U     |
| SW-120   | 7-Oct-97     | 1                   | 39            | 39              | 31      | 2       |
| SW-120   | 27-Apr-98    | 1 U                 | 54            | 1 U             | 1 U     | 1 U     |
| SW-120   | 15-Oct-98    | 1 U                 | 36            | 1 U             | 1 U     | 1 U     |
| SW-120   | 16-Apr-99    | 10 U                | 92            | 10 U            | 10 U    | 10 U    |
| SW-130   | 6-Mar-96     | 4.3 U               | 3 U           | 6.5             | 2.8 U   | 3.4 U   |
| SW-130   | 1-May-96     | 4.3 U               | 3 U           | 12              | 2.8 U   | 3.4 U   |
| SW-130   | 9-Apr-97     | 1 U                 | 1             | 12              | 1 U     | 1 U     |
| SW-130   | 7-Oct-97     | 1 U                 | 1 U           | 2               | 1 U     | 1 U     |
| SW-130   | 27-Apr-98    | 1 U                 | 27            | 14              | 1 U     | 1 U     |
| SW-130   | 15-Oct-98    | 1 U                 | 1 U           | 1               | 1 U     | 1 U     |
| SW-130   | 16-Apr-99    | 1 U                 | 5             | 5               | 1 U     | 1 U     |

MPS = Media Protection Standard

U = Nondetect with detection limit given

J = Estimated value

1,2 Dichlorobenzene MPS=94 PPB

Chlorobenzene MPS=1700 PPB

o-chlorotoluene MPS=1500 ppb

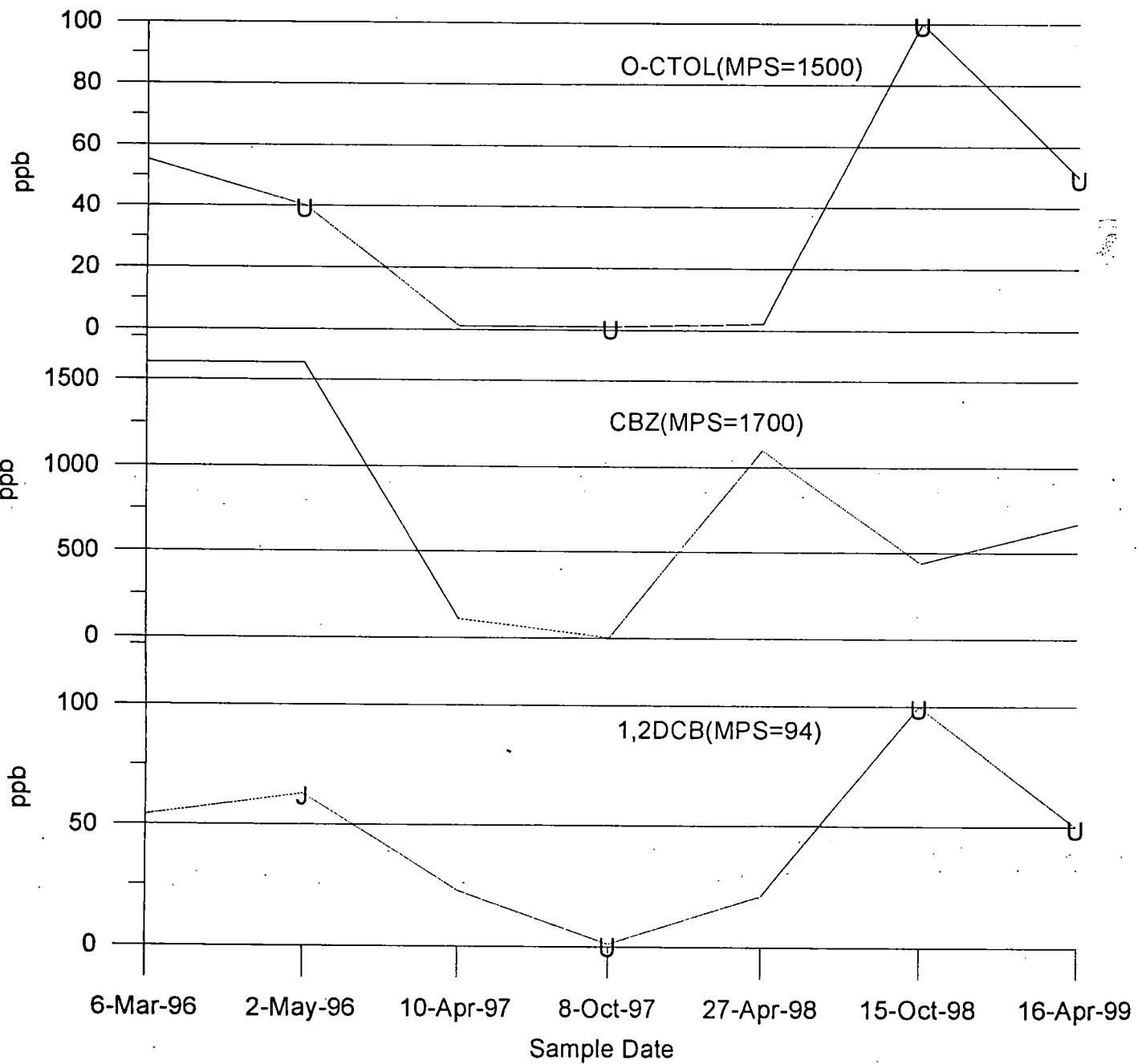
toluene MPS=1700 ppb

xylenes MPS=76 ppb

Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well SW-110  
In-River Wells

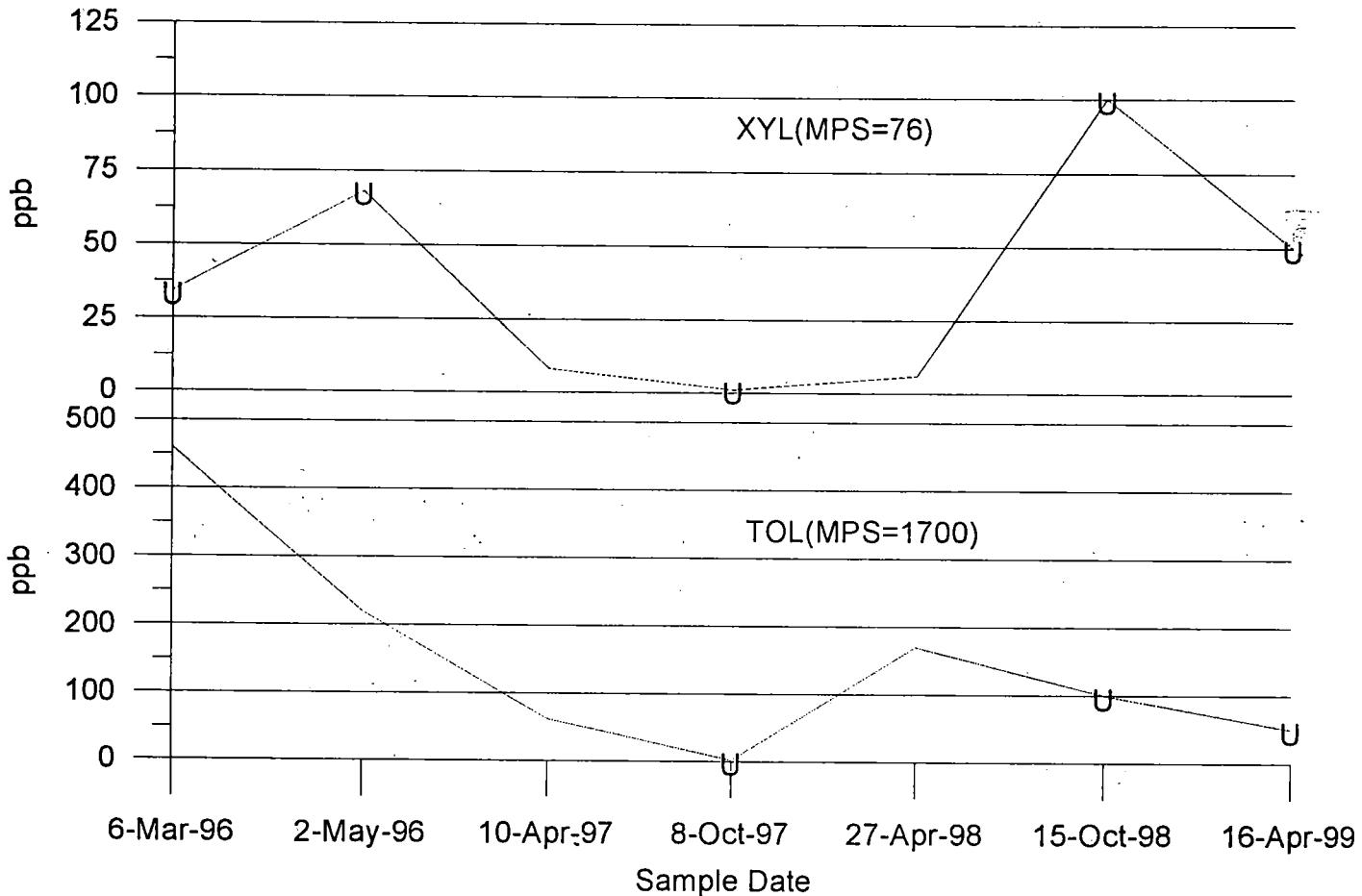
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
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Semiannual Monitoring

Well SW-110  
In-River Well

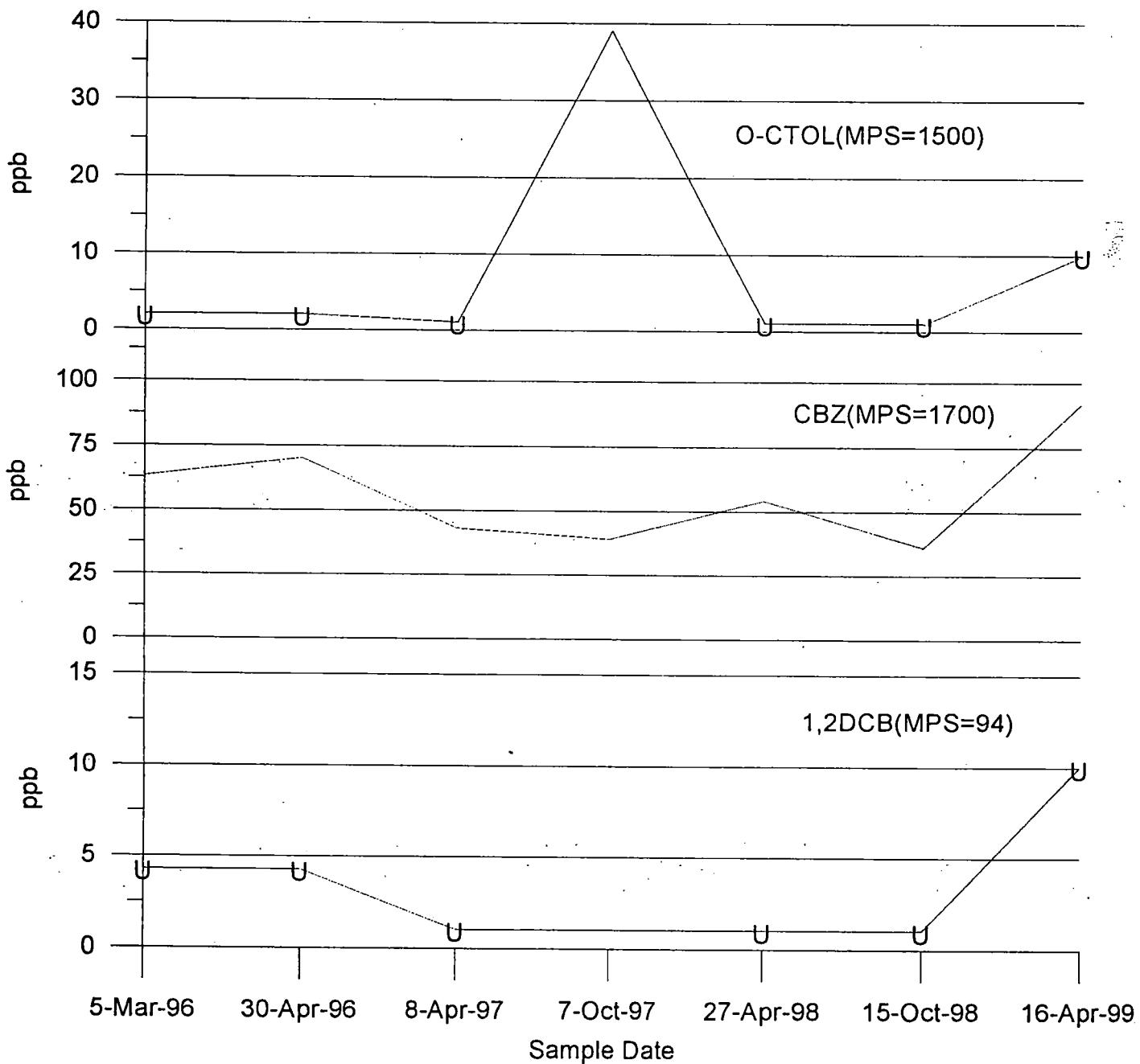
"U"=Nondetect  
"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well SW-120  
In-River Well

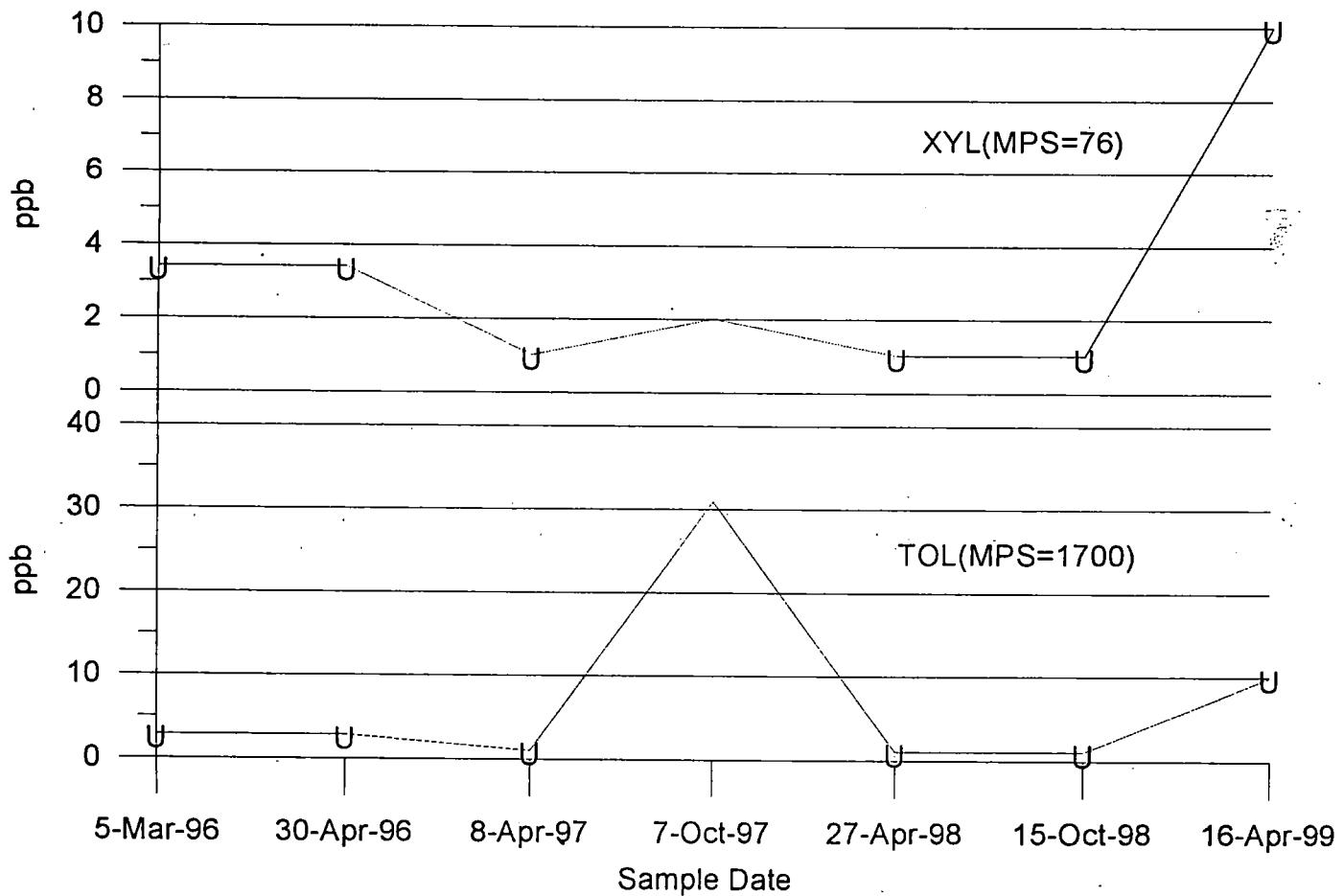
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"J"=Estimated Value  
MPS=Media Protection Std.



Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well SW-120  
In-River Well

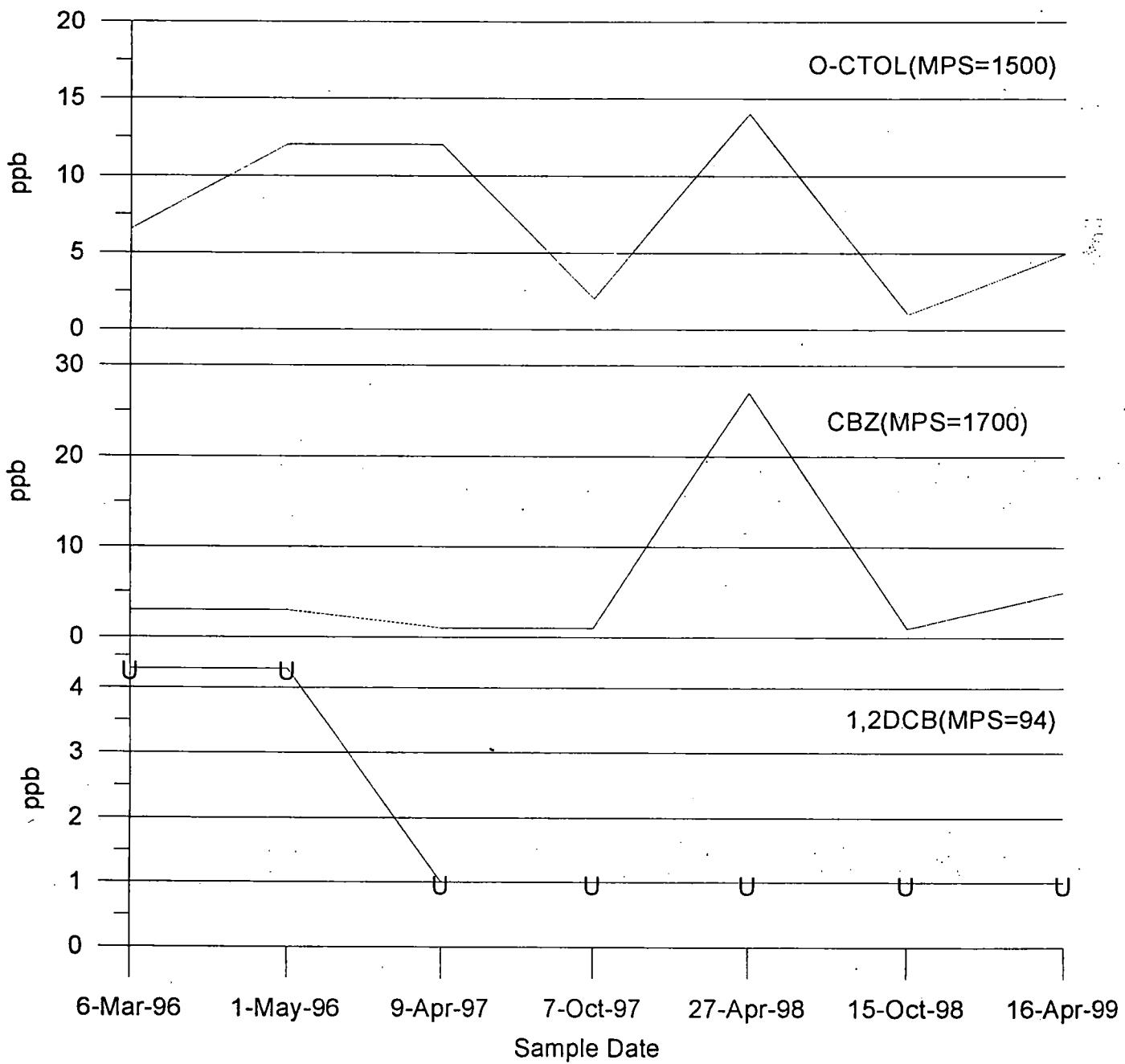
"U"=Nondetect  
"J"=Estimated Value  
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Ciba Specialty Chemicals Corp  
Cranston Rhode Island Facility  
Time-Series Graph  
Semiannual Monitoring

Well SW-130  
In-River Well

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Ciba Specialty Chemicals Corp  
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Well SW-130  
In-River Well

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